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9 June 1978

## WORLD EPIDEMIOLOGY REVIEW

No. 95

This serial publication, based on worldwide press and radio reports, contains information on the epidemiology of human, animal, and plant diseases. Disease incidence, reported outbreaks, and various related epidemiological factors are included. Items are presented by country of occurrence rather than by country of original press report.

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## I. HUMAN DISEASES

### WORLDWIDE

#### FOUR-NATION MALARIA MEET OPENS

Kabul THE KABUL TIMES in English 19 Apr 78 p 1

[Text] Kabul, April 19 (BAKHTAR)--A conference on malaria and lashmania control opened yesterday morning in Kabul with the participation of Afghanistan, Iraq, Pakistan, and Iran.

At the conference opened with the reading of messages of Prof. Dr. Abdullah Omar, the Minister of Public Health and Dr. Taba, Director of the Regional Office of World Health Organisation's East Mediterranean region.

The Minister of Public Health in his message appreciated all-sided efforts of the participating countries in controlling malaria and expressed wish that the four participating countries attain success in controlling malaria.

Similarly Dr. Taba in his message to the conference pointing out to the Tehran and Baghdad conferences on this subject held earlier, expressed his best wishes for the Kabul conference in achieving its aims and paving of ground for further cooperation between the Kabul conference participating countries.

Following this Dr. Karim Nosheen, President of Malaria and Lashmania Institute, expressed his thanks to the participants of Iran, Iraq, and Pakistan and representatives of the international organisations for taking part in the Kabul conference. Dr. Nosheen said that as the members of the East Mediterranean Region the participating countries should make all-sided efforts and cooperation for the benefit of the countries.

He added, the objectives of the conference, held alternately in one of the participating countries with the cooperation of the World Health Organisation, are adopting and pursuing of new and useful methods for the control of malaria.

The opening ceremony was also attended by Prof. Dr. Ibrahim Azim, Deputy Minister of Public Health, some members of the Malaria and Lashmania Control Institute and some representatives of the international organisations in Kabul.

The BAKHTAR reporter adds, the conference which will last for three days elected Dr. Mohammad Karim Nosheen, the President of the Lashmania and Malaria Control Institute, as Chairman of the conference and the Iraqi representative as vice-chairman and delegates from Iran and Pakistan as reporters.

Kabul THE KABUL TIMES in English 19 Apr 78 p 2

[Editorial: "Malaria Eradication"]

[Text] Representatives of Afghanistan, Iran, Iraq and Pakistan are now meeting in Kabul to review their fight against malaria, and chart out the future course of this campaign.

Afghanistan has been engaged in mass campaign to eradicate this crippling, and at times fatal disease, for over twenty years. The campaign has resulted in saving the majority of the national population from this disease, yet recurrence is an immense problem, especially now that the carrier has developed [?immunity] against medicaments commonly used.

New methods and new medicines and new tools to fight the disease and consolidate the gains achieved so far are essential, and this will be possible only through extensive international cooperation. The World Health Organisation has played a pivotal part in the world campaign against malaria, especially in the developing world.

The Organisation's help will prove more effective when the countries in the region act in a coordinated manner, and know enough about one another's operations and programmes, and the effective methods developed by them.

Manpower losses each year around the world amount to billions of working hours, and the economic losses accruing from this are staggering.

At a time that the developing countries such as Afghanistan are trying to devote all their resources to their development activities a massive recurrence of malaria, and the ineffectiveness of the campaign in malaria

prone areas will certainly divert a huge part of these resources, and will cripple a good portion of the human resources.

Most of the country's population, as is the case in other developing countries, are engaged in agriculture and animal husbandry and these are the people who are more exposed, and as a result more vulnerable. Agricultural production is the largest single sector of the national economy, and the rural population should be protected against malaria and other communicable diseases at all cost.

Even though there has been setbacks in some parts of the country in the fight against malaria, the situation is now fully under control, and the Malaria and Lachmania Eradication Department, is receiving extensive support from the government, from the international organisations and the friendly states.

The aid which WHO and UNICEF offered the department is now augmented by assistance from the Soviet Union and Japan and this is certain to render more effective operations of the department.

Well aware of the advantages of the successful culmination of the fight against malaria the government of Afghanistan has also substantially increased the department's budgetary allocations.

The meeting in Kabul as those held among the participating countries in Tehran and Baghdad is certain to generate new guidelines and action plans which will help all the participating nations in their war against malaria.

#### AFGHANISTAN

##### HEALTH MANPOWER INSTITUTE PLANNED FOR KABUL

Kabul THE KABUL TIMES in English 24 Apr 78 p 4

[Text] A health manpower development institute is planned to be established in Kabul through cooperation of friendly countries so that the shortage of medical personnel is met. As of now the health manpower is inadequate in carrying out the health affairs of the country.

Stating the above in a press conference this week the Public Health Minister said contacts have already been made with a number of friendly countries for establishment of a medical personnel training institute.

Emphasising the importance of the Afghan National Health Programme in the wake of Health Policy of the Republican state the Public Health Minister



Prof. Dr. Abdullah Omar said "it is the duty of us all to join hands in implementing this programme."

Expounding on the Afghan National Health Programme Dr. Omar pinpointed the obstacles in way of implementation of health projects in the country.

Illustrating the social and economic condition of the society, he noted that out of 17 million population 12.131 million or 71.2 percent is in rural areas, 2.471 million or 14.5 percent in urban areas and 2.451 million or 14.3 percent nomads. He said that the per capita income in Afghanistan is estimated to be between 95 to 100 dollars, and excluding the students, the literacy rate is approximately eight percent.

The sparse population and the fact that the majority lives in rural areas, make it difficult to speedily implement the public health programmes and expand the services, said Dr. Omar.

As to the existing health manpower and medical facilities, Dr. Omar said that according to the statistics compiled in 1967 there are 65 government hospitals besides the hospitals of the Education and National Defence Ministries, in the country, 12 of which are located in Kabul, the remaining in the provinces. The number of hospital beds in Kabul is 1,037 and in provinces 939. In addition to above-mentioned medical establishments there are 115 basic health centres, nine urban health centres, 73 sub-centres, six malaria units, 20 small-pox units, though Afghanistan is a small-pox free country, and five zonal TB units in addition to TB centres in Kabul.

As for medical and paramedical personnel Dr. Omar said 884 physicians serve at the Ministry's health institutes with 907 nurses, male and female, 134 pharmacists, 325 compounders and 285 lab technicians, 410 nurse midwives and auxiliary nurse midwives, 336 sanitarians, 115 assistant dentists, and 645 vaccinators.

Referring to the major health problems in the country, the Minister of Public Health said tuberculosis tops the list followed by malaria. According to 1967 statistics the proportion of malaria cases was 14/1000. Malaria is major problem in the country because the mosquito carrying the disease has become resistant to ordinary medicine used against it. Thus this technical problem and the fact that effective medicine is very costly, has made the control of malaria very difficult. Another problem which makes the control of malaria difficult is that malaria mosquito is seen at 2,000 metres altitude, added Dr. Omar. However, in spite of these difficulties it is hoped that some achievements will be scored in fighting the disease through programmes envisaged in the Afghan National Health Programme, he added.

Other health problems are trachoma in the western and south-western parts of the country and lashmania which many people are suffering from. Leprosy

is not a major problem and a case for concern. The disease is under control, said Dr. Omar.

The Afghan National Health Programme [words missing] creation of coordination between different health institutes functioning under different state organisations such as National Defence Ministry, Ministry of Education, Ministry of Higher Education and Rural Development Department. It also envisages the expansion of scientific researches in the field of public health for achieving the goal of national health services in the country.

Under the National Health Programmes the health services will be expanded to remote areas and modern medicine will be popularised alongside the traditional medical practice, said the Minister of Public Health.

In view of social and economic characteristics of developing countries, which Afghanistan is part of preference is given to preventive over curative medicine.

As part of effort to make the health services more economical the generic medicines will be popularised to gradually replace the patent medicines, said Dr. Omar.

For increasing the production of medicines locally the feasibility report for establishment of a pharmaceutical plant has been prepared. The Yugoslav government has already agreed to help Afghanistan in establishing such a plant through joint-venture. In a few months time the project will be finalised, he noted.

Every effort will be made to provide the ground for treatment of all kinds of diseases inside the country so that the people are discouraged from seeking medical treatment abroad, thus saving much needed foreign exchange, said the Public Health Minister.

#### ARGENTINA

##### YEAR'S FIRST HEMORRHAGIC FEVER FATALITY REPORTED

Buenos Aires LA NACION in Spanish 21 Apr 78 p 10

[Text] Rosario--The year's first fatal case of Argentine hemorrhagic fever was recorded yesterday in the south of Santa Fe with the death of a worker in the city of Bigand, in the department of Caseros, a region marked by high quality grain production and in which the corn crop had just recently been harvested.

The man hit by the virus, which is transmitted mostly by rats, was Ruben Hilario Tomino, a 34-year-old married man with four children, who had begun working 2 months ago at the grain silos that the company Tettamanti SRL owns in Bigand. The initial symptoms were like those of a cold, and the hemorrhages began later, which in the most severe cases are complicated with encephalitis.

Once a diagnosis was made, Tomino was taken on the 12th to the Pergamino Specialized Assistance Center, which is run by Dr Julio Miaztegui, where he passed away the day before yesterday.

#### REPORTS CONCERNED WITH MALARIA

Buenos Aires LA NACION in Spanish 23 Apr 78 p 19

[Text] San Miguel del Tucuman--The Tucuman administration officially announced that health authorities have detected a case of malaria in the interior of the province. It was pinpointed in the town of Las Mesadas, which is near the former Santa Lucia sugar mill, 45 kilometers southwest of this capital in an area of army antisubversive operations.

According to official information, the government gave instructions to the Secretariat of Public Health, which ordered medical personnel sent to the site. The person with the disease, whose name and age were not furnished, has been placed in the La Madrid Hospital in the city of Monteros and is undergoing the proper treatment.

Furthermore, coordinated efforts have been undertaken with officials at the National Malaria Service in connection with residential epidemiology inquiries and preventive measures. The information also notes that this kind of outbreak does occur periodically, as in El Cadillal and Los Sarmientos, where it was immediately controlled.

Until 1940 the entire province suffered from malaria, and domestic and international aid was furnished to eradicate it, something that was finally achieved after many years of struggle.

Buenos Aires LA NACION in Spanish 24 Apr 78 p 11

[Text] San Miguel del Tucuman--A report issued by the provincial government states that 14 cases of malaria have been recorded in Las Mesadas, department of Monteros, near the Santa Lucia sugar plantation, 70 kilometers south of this capital city. Another victim afflicted with the disease was discovered a few days ago in the same locale, according to reports from the National Malaria Program officials, Tucuman operations. The official bulletin released states that a team of medical personnel

is engaged in the task of searching out new cases in order to provide them with immediate medical assistance such as is being provided--it states--to the patients now being treated. It further asserts that a task force of specialized technicians has been provided for spraying the housing with insecticides to exterminate the carrier mosquito. The government release also included statistics on the incidence of malaria in Tucuman in the years 1956 to 1967. In 1956 there were 31 cases; in 1957, 0; in 1958, 32; in 1959, 6; in 1960, 5; in 1961, 7; in 1962, 4; in 1963, 4; in 1965, 6; in 1966, 4; in 1967, 52 [1964 not given]. The bulletin states that these cases of malaria should give the public no cause for alarm since this type of outbreak occurs periodically, as has taken place in the past, as can be seen from the statistical data.

Buenos Aires LA NACION in Spanish 25 Apr 78 p 7

[Text] Reports from Tucuman, printed in yesterday's edition of this newspaper stated that 14 cases of malaria had been reported at Las Mesadas, in the department of Monteros.

In order to evaluate the importance of this occurrence and the incidence of this disease in our country, we interviewed the authorities of the Department of Zoonosis of the National Ministry of Public Health, Bureau of Sanitary Medicine, National Health Promotion and Protection Division.

In the opinion of these experts, malaria is not a serious problem in Argentina and occurs only in certain very limited areas of the northeast bordering on Bolivia, specifically, at Salta and Jujuy.

The most affected regions are the cities of Tartagal and Oran in the province of Salta, and their environs, where Bolivian territory juts like a wedge into our borders and cases of malaria appear, usually imported, because of the fact that the dense human traffic there is difficult to control, particularly because of the problem of transient laborers.

As to the cases reported in Tucuman, although the information has not yet been confirmed, one could venture the opinion that once again these involve cases of imported disease, that is, persons entered our country who were already carrying the disease. But, because the vector of malaria, the anopheles mosquito, does exist in the zone, it is imperative to take the preventive measures indispensable to prevent the spread of the endemic disease.

Generally speaking, transient workers, usually hired for the harvest, are already sick on arrival, and the illness simply erupts here. This is borne out by the fact that for many years no autochthonous cases have been reported in Tucuman, so much so, that the province disengaged itself from the National Antimalaria Program and took over the responsibility of controlling the problem itself.

Malaria is a summer-fall malady, that is, it occurs in the period from November to the end of March or early April; hence, the highest percentage of malaria patients are detected during those 5 months.

The total number of cases recorded in the country--and the Zoonosis Department has virtually up-to-date figures--is made up of data from the two large border regions, the northwest (bordering Bolivia), and the northeast (bordering Brazil and Paraguay). In the latter region (which is made up by the provinces of Corrientes, Misiones, Chaco and Formosa) it can be said that no cases have been uncovered for many years, thanks to the good preventive campaigns carried out in those nations, which supplement the measures taken by Argentina.

When an outbreak such as the one in Tucuman takes place, spraying with insecticides to exterminate the carrier mosquito is intensified, as well as epidemiologic vigilance, which brings about a rapid drop of the disease.

Unfortunately, in northwest Argentina outbreaks occur more frequently and permanent vigilance is necessary to prevent their spread.

During the first quarter of 1978, 120 cases were recorded, as compared to 256 for the same period in 1977, a drop of more than 50 percent. The number of local inhabitants affected, that is, cases that are not imported, can be considered negligible.

The experts in the Zoonosis Office who were interviewed stressed that malaria should not be considered a serious problem, and furthermore, that its tendency is to decline. Nevertheless, the authorities in the field of public health know that they must not lower their guard, and must continue the measures necessary to totally eradicate malaria from our country, a task they pursue with dedication.

Buenos Aires LA NACION in Spanish 28 Apr 78 p 11

[Excerpt] A few days prior to the occurrence of the cases of malaria recently reported in Tucuman, a mission of experts from the National Ministry of Public Health and WHO traveled throughout the endemic region of our country for the purpose of evaluating the results of the National Malaria Eradication Campaign which has been in effect for several years.

In order to ascertain the present situation we interviewed Dr David Becker, adviser to the National Department of Health Protection and Promotion, who informed us that, in order to eradicate malaria, four basic conditions must be met: exterminate the vector mosquitoes--in this case the *Anopheles vivax* mosquito--that live inside houses; provide residual action insecticides; achieve the elimination of the parasites from infected human organisms; and obtain the drugs that make

possible the complete cure of detected cases of the disease. As can be seen, the second condition is closely tied to the first, and the third condition to the fourth.

#### The Present Situation

Dr Becker stated that the endemic area used to cover almost 360,000 sq km, and that at the present time 334,000 sq km, that is, 95 percent of that area, is in its final phase of the program, that of maintenance, during which the disease is considered to have been eradicated.

Another 3,250 sq km are in the consolidation phase, which is the second stage of the plan, during which houses are sprayed with residual insecticides in order to eliminate the vector that spreads malaria.

Finally, the first phase of the plan, the scheduled attack phase, is being implemented in an area covering 11,250 sq km that includes the departments to the north of Salta, on the Bolivian border, that is, Oran, San Martin, Iruya and Santa Victoria. This initial phase lasts for a period of 4 years, the length of time during which the vectors that spread the disease persist.

A program of permanent eradication is the objective set forth by our sanitary authorities, and for these purposes the third phase of the plan, that is, the stage of consolidation of the results obtained during the first two, must be permanently maintained as long as there is even a single case of malaria reported, for which purpose epidemiological monitoring must be maintained.

#### Epidemiological Monitoring

This may be either active or passive. The former consists of action taken by agents of the National Malaria Eradication Campaign who search, in suspected patients--those with fever episodes--for the presence of malaria plasmods in their blood; whereas passive monitoring is conducted through health-service clinics and volunteer-service laymen who upon detecting a suspicious case, extract blood samples and send them on to specialized centers for laboratory testing for the disease. Such laymen may be teachers, or other non-medical professionals, or any concerned individuals with social consciousness but minimal training, that may be alerted by suspected cases of the disease.

In this regard, it should be recalled that the cases reported in Tucuman were detected thanks to an alert sounded by a school teacher in that place. For this reason, the importance of such volunteer collaboration should be stressed, as a means of aiding the responsible authorities in the face of insufficient available trained official staff.

## The Tucuman Cases

As to the cases that occurred in Tucuman, Dr Becker stated that the appearance of such cases are always to be expected within the eradication plans envisaged. Nevertheless, he emphasized that such cases are isolated examples, controllable, and they do not involve the risk of propagation. Furthermore, it is possible indeed that when their origin is finally traced, it may be determined that it was due to an imported case.

Unfortunately, situations like these will continue to arise as long as other countries do not maintain epidemiological monitoring of the quality and quantity in which it is being carried out in the Republic of Argentina.

Buenos Aires LA NACION in Spanish 28 Apr 78 p 6

[Text] San Miguel del Tucuman--The government of the province and the national authorities are coordinating the work to be carried out in the Las Mesadas zone, 70 kilometers southeast of this capital city, where cases of malaria have been recorded recently.

A meeting was held for this purpose at the Ministry of Social Affairs, presided over by Dr Emilio Grana, minister of social affairs, and attended by the public health secretary, Col of Sanitary Services Mario Remis; federal sanitary delegate, Dr Serafin Vera; and the chiefs of the national programs for the Eradication Campaign against malaria and Chagas disease, engineer Juan Carlos Newman, and Dr Julio Ouset. An evaluation was made at that time of the action carried out by the various sectors, coordinating operations which will be implemented in a sustained manner until the definitive eradication of malaria is achieved. The action will be directed toward epidemiological monitoring of the zone, detection and treatment of cases of disease, records, and updated progress reports.

### Visit to the Area

The minister of social affairs, Dr Grana, and other officials visited the Las Mesadas zone and inspected the measures being implemented there to control the outburst of malaria. Visits were also made to the patients at the Santa Lucia hospital, nearby, where 20 cases of malaria are hospitalized, most of them minors.

The task force stationed in the area by the army--because the sector is located within the so-called antisubversive operations zone--held a meeting with the commander of the forces, Lt Col Jorge Bretau.

Furthermore, National School No 380, at Las Mesadas, where the aforementioned cases were reported, was also visited, to make certain that no new cases had been found.

Blood samples were taken from the local population, 300 samples having been taken and sent to the laboratories at Monteros and Concepcion hospitals. It is reported that the outbreak was localized, and that no new cases are expected.

A team of exterminators is carrying out spraying activities in the area.

They are expected to disinfect 100 homes, inhabited by 740 persons, including elderly people, adults and minors.

#### CAMPAIGN AGAINST CHAGAS DISEASE

Buenos Aires LA PRENSA in Spanish 24 Apr 78 p 5

[Text] On the occasion of the first anniversary of occupancy of its new headquarters, the Argentine Chagas Control Health Foundation held a press conference, at which its medical director, Dr Juan Hannouche, gave a detailed account of the work accomplished by that foundation.

He stated in the first place that, "because Chagas Mazza disease is transmitted by the kissing-bug [conenose], the insect must be exterminated; because the insect proliferates in huts or hovels, these must be replaced by adequate housing; because there is ignorance in regard to the disease, we must provide information; because there is inadequate professional knowledge, we must provide expert training; because we do not yet have available practical preventive measures, research must be continued; because there are patients with the disease, they must be treated as early as possible to prevent the affliction of cardiac disease.

"The foundation," he added, "interpreted the complexity of the disease, and the situation in this way," and it was on this basis that it proceeded to work, so that within a year it obtained ample quarters, adequate for the services it intends to provide. Today, 1 year after occupying the new quarters, we can assert with legitimate pride that, to combat Chagas disease, the foundation now has available printed matter (posters, pamphlets), audiovisual devices (slides and films), with the appropriate projectors; medical clinics for the treatment study of Chagas disease patients; and diagnostic test laboratories.

Dr Hannouche further stated that "because official records show that there are 19 provinces infested with this disease, with an estimated overall total of 2.5 million cases throughout the country (PSB places the figure at 3.1 million, of which approximately 400,000 are cases of Chagas heart disease), it is our view that the foundation, which has been established at an opportune time, is praiseworthy, not only for the services it provides, but also for the expeditiousness with which it has been able to set up its clinics, classrooms, laboratories, appropriate supplies, and so forth, that were obtained by means of cooperation from



public entities, private enterprise, and the media, which understood our objective of contributing to fight the disease."

Buenos Aires LA PRENSA in Spanish 25 Apr 78 p 12

[Excerpts] Santiago del Estero (NA)--The nation's minister of social welfare, Vice Adm Julio J. Bardi, will inaugurate today in the city of Frias the National Campaign Against Chagas-Mazza Disease, an endemic illness that, according to official statistics, affects almost all Argentine provinces to a greater or lesser extent.

At 0945 hours in the Sarmiento Library a stand explaining the disease and techniques of combating it will be set up, after which Bardi and Ochoa will proceed to kick off the campaign.

The two will issue orders to begin work to the 100 men who will carry out the program using vehicles and other equipment to disinfect the entire city over the period of 45 days that the drive will last.

Later on, Bardi, the governor and the other officials will move on to suburban districts to observe the fumigation work in housing units.

They will then observe the same efforts at posts located along roads, and at noon in the Metropól Theater the supervisor at the National Chagas-Mazza Service, Col Carlos Romanella, will give a talk explaining aspects of the struggle against the disease and other details related to it.

#### NEW CONTROLS AGAINST LEPROSY REVEALED

Buenos Aires LA NACION in Spanish 27 Apr 78 p 13

[Text] "Recent statistics have revealed more than 20,000 cases of leprosy throughout the nation. Only part of these have been duly recorded at the present time, and a substantial number of the known cases do not receive regular treatment for the disease," explains the statement issued by the National Leprosy Control Plan which was inaugurated by R Adm Julio Juan Bardi, minister of social welfare, at a ceremony attended by high national authorities, representatives of official and private organizations, national and international, an event held in honor of Dr Arturo Temporini, on the occasion of his retirement.

Minister Bardi asserted that, "the control and eradication of Hansen's disease is a responsibility of the state that cannot be delegated, and which is being assumed and implemented by the execution of this program. As was pointed out, the disease has social implications of special significance, since unfortunately, it brings about the expulsion and

isolation of the patient, and break-up of the family group. We are therefore particularly concerned with the protection of the nuclear family, the essential unit of Argentine society."

The secretary of public health stated with genuine satisfaction that he was announcing the inauguration of a "broad and consistent program to achieve the control of Hansen's disease throughout the entire territory of the nation. Several teams consisting of a doctor and a social worker, equipped as a mobile unit, are now working in this capital city, Greater Buenos Aires, Entre Rios, Tucuman and Cordoba, and within a few days, will be covering other provinces."

It was further stated that the mobile units will function by using the existing fixed centers as bases of operations, at which will be made available the most modern and efficient drugs, as well as the necessary equipment for treatment of leprosy patients. The plan is scheduled to be carried out until 1983.

#### AUSTRALIA

##### POSSIBLE CHOLERA ORGANISM FOUND

Brisbane THE COURIER MAIL in English 12 Apr 78 p 11

[Text] An organism suspected of being cholera has been found in Bulimba Creek, Brisbane.

Health authorities expect to have their fears confirmed or allayed by late today.

Brisbane City Council inspectors found the organism downstream from the Mt. Gravatt sewage treatment works in a routine check following the Beenleigh cholera scare of February 1977.

The State Health Minister (Dr. Edwards) and council health committee chairman (Alderman Mellifont) confirmed the find last night in a joint statement.

They said it did not pose a threat to the community because no industrial or domestic water was taken from the creek.

"At this stage it is simply regarded as an abnormal test result," he said.

### One Sample

They said the organism was found in one sample among several taken recently in different parts of the creek.

Health Department and City Council officials will meet this morning to plan a course of action should the organism be cholera.

But they will not know until later today, when tests are expected to be finished. The organism has to be given time to grow before it can be identified.

Dr. Edwards and Alderman Mellifont said Bulimba Creek tests should continue to establish any possible source of contamination.

### Regular Tests

Tests over many months had been negative.

All creeks and rivers in Queensland were sampled regularly by local authorities and tested in Health Department laboratories, they said.

This followed the discovery of cholera in the Albert River, near Beenleigh, in February 1977.

A Beenleigh woman, 56, who spent several weeks in Royal Brisbane Hospital with cholera was its only victim.

Authorities still have not found the source of the Albert River cholera, but believe it may have mutated from a similar, but harmless, organism.

## BOTSWANA

### RABIES INFECTION

Gaborone DAILY NEWS in English 10 May 78 p 1

[Text] A rabid dog which killed an eight year old boy in Seleka last month, has claimed a second victim in Tupya in the Tswapong South area. Olebile Mtsweta, 13, died at the Sekgoma Memorial hospital in Serowe on April 21 hours after he had been admitted. He was also bitten on the same day as the first victim, David Boitumelo of Seleka, on February 22, but in a different village.

The dog, which had been hunted since the death of the first boy, has now been traced, killed and buried by Olebile's father, according to the Palapye Veterinary Officer, Mr Caxton Chawatama.

There are however, reports that three more people are receiving treatment following bites by another dog which was believed to have been bitten by the one that poisoned Olebile.

They were bitten between April 20 and 22 and include an aging man of 68, Mr Othomile Ntshana of Tupy. The dog was however, buried by villagers after they had found it lying dead in the area.

Yet another woman, Ntebogeng Kgosisdialwa of Seleka has also been bitten. She is still receiving treatment.

Following numerous reports of rabid dogs straying in Tswapong the Veterinary office has mounted a vaccination campaign at Ratholo, Seleka, Palapye Lerala and Gootau as of April 26.

Mr Chawatama could not say when the entire district would be vaccinated beside saying that there was a shortage of staff.

According to reports from the Ramokgonami Clinic, some 21 people are presently undergoing treatment against rabies as a result of having being in contact with their infected relatives.

Advice on how to treat rabies wounds while away from medical help has been given out by the Staff nurse, and victims are advised to cleanse their wounds with water, either dirty or clean, scratch out the poison from the wound with a steel brush or to wash the wound with urine.

Villagers are also urged to report any rabid case to the nearest clinic as soon as possible.

#### DIAMOND MINERS REFUSE DIPHTHERIA VACCINE

Gaborone DAILY NEWS in English 11 May 78 p 1

[Article by Tarsicius Modongo]

[Text] A large number of Orapa residents is reported to have refused to take the second and third diphtheria vaccinations and as a result Health authorities have now decided to have vaccination posts at the Orapa main gate and mining plant.

Diphtheria outbreak in the Boteti area claimed the lives of more than ten people. It led to the closure of the Letlhakane Primary School and only 4,000 people at Letlhakane, Mopipi, Orapa, Mosu and Matshumo have been successfully vaccinated during an extensive vaccination campaign carried out by health authorities after the outbreak.

When the Minister of Health L. M. Seretse recently visited the area during his one month tour, he was confronted with many complaints in each of the villages he visited.

At Orapa workers came up with complaints about the 24-hour termination of contracts and they called for immediate revision of the contract, as many people have so far lost their jobs because the regulations contained thereby are not given to workers to read before signing the contract agreement.

Speaker after speaker expressed the need for a DAILY NEWS reporter, and labour officer stationed in Orapa and that the posts of Personnel Manager and chief security officer be localised immediately.

The workers told the Minister that apartheid was still being secretly practised and they wondered why whites staying in Orapa do not attend ministerial meetings and other meetings held by Government officers.

In the other villages visited by Minister Seretse, residents complained about flogging which is now a daily thing, if cattle are found unattended.

They called on the Minister to invite an official from the Ministry of Agriculture to address them on floggings and other things connected with the restriction of cattle movement.

Some residents held the Government responsible for "this flogging and alleged that the flogging that is taking place is at a high rate and yet on the other hand, Government is doing very little to fight the foot and mouth disease."

At Xomo, a small village on the western side of Orapa, residents complained that their councillors are old and useless. They further called for their quick replacement and also alleged that the councillors do not even visit them to hear their problems or inform them about what has been discussed at council meetings.

Gweta residents have also complained of the irregular visit by their Member of Parliament and pointed out that he has not visited them for the last two years.

As a result, they alleged, their problems are never discussed in Parliament. Gweta village, was during the rainy season, completely cut off from South Eastern Botswana.

## DIPHTHERIA OUTBREAK

Gaborone DAILY NEWS in English 11 May 78 p 1

[Excerpts] The Minister of Health Mr Lenyeletse Seretse completed a one month tour of 60 villages in the Central District last week.

The Minister said that every Motswana was now aware that Botswana was faced with a number of problems which are likely to paralyse efforts to achieve total independence.

He pin-pointed some of the problems like the current outbreak of foot and mouth disease and terrorist aggressions by the Rhodesian rebel regime.

For the district, he said yet another problem was the outbreak of diphtheria of which has led to the closure of the Letlhakane Primary School last month for about four weeks.

## BRAZIL

### REPORTS CONCERNED WITH MALARIA, SCHISTOSOMIASIS

Rio de Janeiro O GLOBO in Portuguese 3 Mar 78 p 17

[Text] According to physician Eduardo Vilhena Leite, head of the Department of Infectious and Parasitic Diseases at the Petropolis School of Medicine, more than 10 million Brazilians are suffering from malaria. Schistosomiasis now affects 14 million people, and the doctor said that the number is tending to increase every year because the disease is reaching areas where no cases had been reported previously.

Vilhena Leite feels that the most important task is to come up with special measures for controlling those diseases and preventing their spread into new areas without neglecting the treatment of those already stricken. He recalled that specialists have noted the existence of new focal areas of schistosomiasis in parts of Amapa and even in Teresina, the capital of Piaui.

He said, "Facts such as these are leading doctors to demand the adoption of urgent measures for controlling the spread of schistosomiasis. The number of specialists in infectious and parasitic diseases is still very small in Brazil--quite below the real health needs of the population, especially in the rural areas and the so-called endemic zones."

Specialists in malaria, schistosomiasis, and other endemic diseases will participate in the Second Seminar on Infectious Diseases and the Fifth Brazilian Symposium on Hepatology in April. The meetings will be held in Petropolis on the 13th, 14th and 15th.

Rio de Janeiro O GLOBO in Portuguese 1 Apr 78 p 13

[Text] Physician Antonio Chicre, district chief of the Superintendency for Public Health Campaigns [SUCAM] in Niteroi, said yesterday that malaria has been completely eradicated in the State of Rio de Janeiro. He said that the case of the veteran in Sao Goncalo "is an isolated occurrence" and that "he most certainly contracted the disease in another state." Chicre added that no malaria cases have been reported in the State of Rio de Janeiro for over 3 years and that it is extremely unlikely that one person would contract the disease in an endemic zone.

According to Antonio Chicre, SUCAM has a team of 50 agents on the lookout for malaria in the Niteroi District alone, which includes 22 municipios. The State of Rio de Janeiro also has about 120 inspectors distributed among SUCAM's other three districts, which are based in Nova Iguacu, Macae and Campos.

Antonio Chicre said that the Niteroi District examines 250 slides (blood tests to diagnose illnesses) every day and that for over 3 years no cases of malaria have been identified. Control of the disease throughout the state is assured through a system of reporting stations. SUCAM agents working out of those stations either contact persons with symptoms of malaria or are themselves contacted by persons suffering fever who suspect that they might have the disease.

Every day those stations send the material they collect to the Niteroi laboratory, which carries out an average of 1,000 examinations a week. There are 650 reporting stations in the Niteroi District alone, and the cases reported in the past few years have involved patients who contracted the disease in other Brazilian states, chiefly Amazonas and Para, which are considered endemic zones.

Malaria Close to Rio in 1975

Because of the lack of control over internal migrations, malaria came very close to Rio de Janeiro in 1975, when there was a strong outbreak in Parati and Angra dos Reis, where about 400 cases were reported. Before that the disease had also reached the Sao Joao River Valley, including a section of Araruama, where SUCAM diagnosed 170 cases. But according to sanitarians, the Ministry of Health did not disclose the outbreak of malaria in those localities until a year later--in June 1976--after the disease had been completely eradicated.

The Ministry of Health sent 150 epidemiology workers and sprayers into the endemic region; the virus of the disease had entered the southern part of the state with laborers working on the Rio de Janeiro-Santos Highway who had been brought in from malarial zones in Maranhao. The managers of the construction firms building the Rio de Janeiro-Santos Highway did not know that the region of Maranhao from where 60 of their workers came was malarial.

The situation in Angra dos Reis became worse when most of the workers decided to remain in the town after road construction was completed. They settled on Cruz Hill, a semislum area near the swampy region where the anophelene--the mosquito that is the vector of malaria--was found. Because there was no information concerning recent outbreaks in the region, SUCAM did not spray the houses with DDT, a recommended preventive measure in areas close to swamps.

In 1976 SUCAM recorded five "imported" cases discovered in Angra dos Reis and initiated a permanent watch along the construction route of the Rio de Janeiro-Santos Highway and in nearby areas. And the spraying of houses with DDT will not end until highway construction is completed. Concerning the northern part of the state, SUCAM says that native malaria is no longer being transmitted. SUCAM's vigilance in that region is assured through the Campos District, where the services of about 2,000 volunteer informants are used.

Rio de Janeiro O GLOBO in Portuguese 12 Apr 78 p 9

[Excerpt] Belem--Malaria has broken out in the Barreira do Campo District of the municipio of Santana do Araguaia, and even the mayor, Jose Ribamar Moraes, has caught it. According to him, 70 percent of the population has contracted the disease, and what is most serious is the lack of medicine.

Mayor Jose Ribamar Moraes has asked the press to act as spokesman for the inhabitants of his municipio and to intercede with the authorities of SUCAM [Superintendency for Public Health Campaigns] and SESPA [expansion unknown] to send medicines with the greatest possible speed so that a mass inoculation program can be carried out.

#### INFANT MORTALITY IN SAO PAULO DECLINES BY 30 PERCENT

Rio de Janeiro O GLOBO in Portuguese 1 Apr 78 p 11

[Text] Sao Paulo--The infant mortality rate in Sao Paulo declined by 31.13 percent during the period between January 1977 and January of this year. That information was obtained from a survey made by the Secretariat of Planning to determine the chief causes of the deaths.



A study was also made to determine whether the causes of the reduction in infant mortality were concentrated in areas affected by improved sanitary conditions resulting from health policies. For that purpose, the area chosen for study was the capital, which accounts for 35 percent of the infant deaths in the state. It was also chosen because it is the area most affected by circumstantial economic and sanitation changes.

In commenting on the results of the survey, Governor Paulo Egydio said:

"Expansion of the water and sewer system in urban areas and the growing coverage of infants under 1 year of age by inoculation programs, along with other measures adopted by the present administration, have led to a general improvement in health conditions in the population and contributed decisively to the drop in infant mortality rates that began 3 years ago."

According to Jorge Wilhelm, secretary of planning, the data used in the study cover the month of January, which is always the month with the highest mortality rate--93.82 deaths per 1,000 live births in 1977. The procedure adopted was that of calculating infant mortality rates by cause of death, based on the official figures for 1976 and on death certificates covering deaths in the capital from January 1977 to January 1978.

The principal causes of death, according to the results obtained, were as follows: respiratory diseases, infectious and parasitic diseases, diseases of the endocrine glands, and problems with nutrition and metabolism.

#### HEPATITIS OUTBREAK REPORTED IN IMIRIM

Sao Paulo FOLHA DE SAO PAULO in Portuguese 14 Apr 78 p 10

[Text] Secretary of Health Walter Leser said yesterday that he has not received "any notification" concerning an outbreak of hepatitis along Aluisio de Carvalho Street in Imirim. The outbreak was reported the day before yesterday by Councilman Mario Americo. But the secretary admitted that it was "perfectly possible" that the outbreak was occurring.

"The reporting of hepatitis cases is not compulsory. When rectifications occur, they are not reported directly to me, but to the regional health departments," said Leser. According to the secretary, hepatitis always exists, but not much can be done about it. The health teams generally wait for an outbreak to be detected in a particular locality and then move in to act on the transmitting mechanisms.

The secretary of health explained that hepatitis "is transmitted by a great number of mechanisms, and there are still no vaccines for it. This makes it very difficult to control, because it is not possible to avoid

the outbreaks that always show up." He said that those mechanisms include "contaminated food or water and direct contagion from healthy or convalescent carriers." Last year, for example, the secretariat found that hepatitis was being spread by poorly sterilized hypodermic syringes in a city in the interior.

Leser said that if the outbreak reported by the councilman is verified, the secretariat will make the usual investigation to discover the probable transmitter of the disease.

Leser said, "We always investigate. Sometimes we discover what is spreading the disease, as we did in the case of the poorly sterilized hypodermic syringes, and then it becomes easier to halt the outbreak. At other times, however, we are not able to discover the exact causes. When that happens, we work on suspected causes. On the chance that water may be contaminated even though it does not show any hepatitis viruses, we require greater purification measures, including an increased chlorination rate for a specific period of time. We also urge the inhabitants involved to observe certain precautions, such as not eating raw vegetables and greens. And with those measures, the outbreak always disappears."

The secretary also said that he sees no direct relation between poor living conditions and the appearance of the disease. He said, "The incidence of hepatitis is also high in the developed countries." As one example, he mentioned the fact that in the United States during the first 10 epidemiological weeks of this year, 9,400 cases of hepatitis were reported. In the first 10 epidemiological weeks of last year, the incidence in that same country was even higher, with 11,200 cases.

#### HEALTH SECRETARY INVESTIGATES CENTER, DISCUSSES TUBERCULOSIS CASES

Sao Paulo FOLHA DE SAO PAULO in Portuguese 14 Apr 78 p 10

[Text] An investigation into alleged irregularities at the Sao Miguel Health Center--in response to charges made this week by Joao Fontao de Souza, the center's director of phthisiology--was started yesterday on orders from Secretary of Health Walter Leser.

The secretary said yesterday that he was most concerned about two of the accusations: first, that the apparatus for examining lung tissue has not been used for almost 2 years for lack of a light bulb, and second, that it takes 2 or 3 months for antituberculosis medicines to reach that center.

Referring to the lack of medicines, which has lasted as long as a month at CS [Health Center]-1, Leser said, "The stocks exist. Someone is responsible for the delay, and that someone is going to have to give an

explanation." He attributed the delay to "a failure in the administrative machinery."

The lack of a light bulb for almost 2 years also surprised the secretary, considering that last year about 50,000 cruzeiros were allocated to CS-1 as its "appropriation for minor expenses." So far this year, the center has received just over 5,000 cruzeiros, and Leser guarantees that by December, as a result of additional advances of funds, the total will exceed last year's amount.

Leser says that lack of personnel and precarious operating conditions are common to all the centers, chiefly those in the most remote locations. In his opinion, the low salaries paid by the state and the location of those centers make it difficult to fill vacancies.

On the other hand, Leser said that the closing of the analysis laboratory in Sao Miguel is part of the operating method chosen by the secretariat, which has decided to send biopsy material to laboratories directly subordinate to the Adolfo Lutz Institute, "which have greater reliability." He said that examination results which used to take 2 hours to obtain are now returned to Sao Miguel after 10 days, but that this has no effect on the treatment of tuberculosis because, in his opinion, 10 days make no difference in a treatment process that lasts a year.

#### "Doubtful Figures"

The report that 2,000 confirmed cases of tuberculosis have been reported in Sao Miguel Paulista did not impress the secretary of health. He does not believe that the figure represents the true situation. He said he knows that 900 patients are currently being treated for tuberculosis at CS-1, and he does not believe that the remaining cases represent hospitalized patients, "because hospitalization for tuberculosis is completely unadvisable." But Leser admits that a good percentage of the patients sent to hospitals may be covered by the INPS [National Social Security Institute], "which still follows the practice of hospitalizing tuberculosis patients."

There were 12,744 cases throughout the state last year (if the incidence of this disease in the United States continues at its present rate through the rest of this year, there will be 24,000 reported cases by December for the entire country, whose population is 20 times larger than that of Sao Paulo). Tuberculosis is currently treated with three basic medicines: streptomycin, hydraside, and etambutol.

On the basis of studies in the Ribeira Valley, where living conditions are also precarious--a situation that favors development of the disease--Leser says that it is not necessary to have the patient treated by a specialist (phthisiologist), because medication alone produces favorable results.

## CHOLERA THREAT

Sao Paulo Cadeia Verde Amarela in Portuguese 1000 GMT 5 May 78 PY

[Excerpt] The Sao Paulo Basic Sanitation Technological Center [CETESB] has found vibrium cholera in sewage samples collected in the port of Santos, and so Secretary of Works and Environment Francisco de Barros has ordered CETESB to increase the concentration of chlorine in the water supply system. CETESB said that there is no reason for alarm, because vibrium cholera was found in only one sample and this is an indication of very low contamination.

The Sao Paulo health secretary told Radio Bandeirantes the details of the case, and he said that the Sao Paulo governor has been informed. The health secretary added that the governor urged the Health Secretariat to stay on top of the case and to adopt strict preventive measures.

Florianopolis Radio Diario da Manha in Portuguese 1515 GMT 9 May 78 PY

[Text] The Health Ministry has made public an official note explaining that there is no confirmed case of cholera in Santos, although two persons continue under medical observation.

The vibrium cholera isolated by the Basic Sanitation Technological Center [CETESB] in a sewage sample in Santos will be taken to the United States today for more accurate identification in the Communicable Disease Center in Atlanta, Georgia.

The studies to be made in the Georgia center will tell definitely if the vibrium cholera strain isolated here is or is not pathological.

Sao Paulo Cadeia Verde Amarela in Portuguese 1000 GMT 9 May 78 PY

[Text] In the [state] Legislative Assembly (Fernando Escalamandre) of the MDB brought up the discovery of cholera virus [as heard] in Santos, saying that there is no reason to panic but that this matter must be treated cautiously. He asserted that the sanitary system must be improved because many houses have their water wells close to their septic tanks.

(Emilio Justo), also from the MDB, said that the sensationalism surrounding discovery of the virus only served to damage commerce and tourism in Santos.

A communique released by the Health Ministry reports that cases of cholera have not been confirmed in Santos. Of all the suspected cases, only two

showed symptoms and will continue under observation. The communique states that surveillance at the airports of Galeao, Salvador, Recife, Belem and Manaus has been intensified. The two cases are two women who ate uncooked vegetables and shellfish in spite of recommendations by sanitary authorities.

## BURMA

### CHOLERA OUTBREAK

Rangoon MYANMA ALIN in Burmese 27 Apr 78 p 6 BK

[Text] A man and a boy died from cholera yesterday at Dedaye Township People's Hospital. The hospital is using medicines bought at high prices from other towns because its stocks of both preventive and curative medicines have depleted. Both the man and the boy have died as they did not receive any treatment due to lack of medicine. So far, 18 cholera patients have died at the Township People's Hospital.

Rangoon MYANMA ALIN in Burmese 27 Apr 78 p 6 BK

[Text] About 20 cholera cases are reported in 7 villages in Ma-Ubin Township and of them 2 have died in Achan Village and another in Alan Village. All the patients admitted to Ma-Ubin People's Hospital have recovered. Five medical teams are touring the villages, giving treatment to cholera victims.

Rangoon MYANMA ALIN in Burmese 8 May 78 p 4 BK

[Text] A total of 76 persons had "loose stomach" in Bassein Town between 1 January and 31 April 1978 and of them 21 had cholera germs. One has died. Out of 422 persons who suffered "loose stomach" in 14 townships of Irrawaddy Division, 37 had cholera germs, of whom 36 have died.

Rangoon BOTATAUNG in Burmese 17 May 78 p 6 BK

[Text] A total of 293 cholera victims were admitted to Taungdwingyi Hospital between the first week of March and 7 May. Of them, 18 have died. The number of cholera victims has declined remarkably following the arrival of 50,000 doses of anticholera vaccine and inoculation by medical teams.

Rangoon Domestic Service in Burmese 1330 GMT 10 May 78 BK

[Text] The Rangoon Division Health Department has issued a directive since epidemic diseases, such as cholera, plague, and so forth, are breaking out in some townships of Rangoon Division. The directive urges people to keep their environment clean, to cover their food, to eat cooked food, to boil drinking water and to inform the health department in case of gastroenteric disorders. The directive also calls on township medical officers to educate the people and to take necessary precautions against epidemic diseases.

#### CEREBRAL MALARIA DEATHS

Rangoon WORKING PEOPLE'S DAILY in English 4 May 78 p 4 BK

[Text] Kyaukka Village of Palaw Township where cerebral malaria is believed to have claimed 26 lives was recently visited by a high-powered health team from Rangoon. The team was headed by Rangoon Health Department Director U Thein Nyunt and Deputy Directors U Khin Maung Kywe and U Nyunt Hlaing. The team carried out chlorination of ponds and wells. Children between 2 and 9 were given particular attention. The Palaw Township Health Department is continuing intensive activities against the disease.

#### MALARIA OUTBREAK

Rangoon BOTATAUNG in Burmese 14 May 78 p 6 BK

[Text] Malaria suppression team supervisor U Saw Han and party examined 31,868 persons from 83,346 houses in 930 villages in Myothit Township, Magwe Division, from March 1977 to March 1978--in 1 year--and treated 1,919 malaria victims [all figures as published].

#### EL SALVADOR

#### NEW EQUIPMENT AGAINST MALARIA

San Salvador LA PRENSA GRAFICA in Spanish 16 Apr 78 pp 3, 10

[Excerpt] The Malariology Division of the Ministry of Public Health and Social Assistance is engaged in a full-fledged campaign to control malaria in all of the country's rural areas. The ministry reported yesterday that the program is being pursued nationwide. Although cost figures were not reported, Public Health has invested about 1 million colones in equipment alone, according to information.

It was pointed out that with the new equipment the Malariology Division is exerting maximum efforts to control the mosquito that carries the disease. This will enhance the disease monitoring posts that are being maintained, as these activities, it was said, will be complemented by fumigation aimed at the larval and adult stages of the mosquito.

#### GREECE

##### MENINGITIS, HEPATITIS REPORTED

Athens TA NEA in Greek 15 Apr 78 p 16

[Text] Two meningitis cases were reported among students in the Athens No 6 Boys Gymnasium which is housed in the No 12 Girls Gymnasium (between Zevxidos and Pytheou streets where the Vouliagmeni Avenue begins). Parents and students are very upset because, as the parents state, the authorities tried to continue classes without any disinfection of the school building. Also, hepatitis cases were reported in the first grade of the First Girls Gymnasium in Kallithea.

#### INDIA

##### DEATHS FROM 'BRAIN FEVER'

Madras THE HINDU in English 19 Apr 78 p 12

[Text] Tirunelveli, April 18--The mystery "brain fever" which had spread in epidemic form in the district had taken a toll of 91 lives. There had on the whole been 282 attacks reported, almost all those afflicted being children.

Disclosing this here, the Tirunelveli Collector, Mr. R. Shanmugam, told newsmen that there had been no admission of cases of "brain fever" since April 4. No one is undergoing treatment either, he said.

Mr. Shanmugam said Nanguneri, Manur, Palayamkottai and Kovilpatti were the blocks where there was a large incidence of the disease.

He said following tests done by staff of the Virus Research Institute, Poona, the disease which broke out four months ago had been identified as "Japanese viral encephalitis."

Blood samples of pigs and migratory birds suspected to be the probable reservoirs of the infection were being taken. Mosquitoes, the transmitting

agent, had also been collected by the staff of institute for research studies. Blood samples of human beings in some of the affected areas have been taken to study the extent of the epidemic.

#### BOMBAY SMALLPOX SCARE 'FALSE ALARM'

Bombay TIMES OF INDIA in English 5 May 78 p 3 BK

[Excerpt] Bombay, May 4--The Deputy Municipal Commissioner, Mr. S. R. Rane, admitted in the corporation meeting here today that a suspected case of smallpox was reported from an Amboli resident on April 14.

Mr Rane, who was replying to a short-notice question by Mr. Hans Bhugra (Cong-I), however, said that it was later found to be a case of chickenpox and the residents from the area were treated accordingly.

Mr Rane said the Ward Office concerned also carried out a survey of 150 houses around the area from where the report came and re-vaccinated 172 people.

#### INDONESIA

##### FLORES ISLAND CHOLERA EPIDEMIC

Hong Kong AFP in English 1020 GMT 19 Apr 78 BK

[Excerpt] Jakarta, April 19 (AFP)--Fifty-two people have died of cholera in eastern Flores Island, east of Bali, while 421 others were being treated in hospitals, it was reported here today. The large circulation daily KOMPAS said the cholera outbreak had been taking its toll since January in 10 subdistricts.

##### CHOLERA IN SUMATRA

Hong Kong AFP in English 0439 GMT 16 May 78 BK

[Text] Jakarta, May 16 (AFP)--About 400 persons were today reported to have been affected by a cholera-related disease in the Kerinci area in Central Sumatra. Press reports said the authorities have rushed medicines and issued instructions to local administrators and the public to prevent the disease from spreading. So far, there were no reports of fatalities. The disease, marked by severe diarrhea and vomiting, is endemic in many parts of Indonesia. Similar outbreaks were reported this month in Nias Island, an important tourist destination of the Sumatra West Coast.



## GASTROINTESTINAL-LIKE DISEASE

Jakarta Domestic Service in Indonesian 1200 GMT 30 Apr 78 BK

[Text] Up to today, 69 persons have died of a "muntah-berak" [vomiting and diarrhea] epidemic on Nias Island; 387 others are under treatment. Incoming reports say that the disease has become chronic due to poor sanitary conditions. A medical team, led by Dokter (Bambang), which has managed to reach the villages of (Olonamongan) and [words indistinct] in (Mandede) County, is running out of rice supplies and has had to live on tubers during its stay there. There is no more rice in the two villages. A total of 75 percent of the villagers live in huts in poor sanitary surroundings. Those suffering from the "muntah-berak" disease live in hard to reach areas and are only serviced by the staff of the Public Health Center with great difficulty, because the means of communications on the island is still far from being perfect. According to the Nias District Health Service, patients of the disease have not yet received medical aid from the Country Health Service.

## IRAN

### ONLY ONE-THIRD OF IRANIANS RECEIVE PIPED WATER

Tehran TEHRAN JOURNAL in English 10 Apr 78 p 3

[Article by Irfan Praviz]

[Text] Tehran--A mere third of Iran's rural population receives piped water and even for these people supply arrangements are inadequate, a Health and Welfare Ministry official charged yesterday.

In an interview with the JOURNAL, ministry research chief Abbas Nikkhah said piped water supplies are available to only six million of the 18 million people residing in rural areas.

Stressing that one of the biggest problems is to make people understand the importance of piped water, Nikkhah said the ministry has "finalized several plans designed to provide the remaining 12 million rural inhabitants with clean water by the end of the Seventh Five-Year Plan in 1988."

Water pollution is one of the most dangerous factors responsible for fatal human diseases and in the light of industrial growth, which is increasing both air and water contamination, the ministry wants to introduce strict control measures.

Technical assistance from the World Health Organization has enabled the finalization of a plan to investigate water pollution levels throughout the country, Nikkhah added.

"Both surface and subterranean water will be tested to determine the extent of the poison danger and enable specific measures for the provision of clean drinking water."

The research chief said the tests will be completed in two to three years and then action will follow to reduce pollution.

Nikkhah admitted unhealthy drinking water had caused several fatal diseases to break out in southern Iran, including malaria and gastro-enteritis.

But he maintained visitors from neighbouring countries are equally responsible, since they carry diseases with them. "For this reason malaria still poses a danger in Iran."

Asked about desalination projects as a source of water, Nikkhah said efforts are being made here but plants are so costly that most countries cannot afford this method.

But he reiterated that the world's water is 95 per cent salt water, four per cent ice and a mere one per cent is drinkable.

#### MINISTRY ISSUES CHOLERA WARNING

Tehran TEHRAN JOURNAL in English 24 Apr 78 p 3

[Text] Tehran, Sunday--The Ministry of Health and Welfare has warned against a possible outbreak of cholera this summer.

Outlining a four-point preventive plan, ministry officials called on the public to observe proper standards of hygiene as a means of preventing a cholera outbreak.

The ministry release said the most effective method of prevention is to drink hygienic water. But where piped water is not available, boiled water is recommended.

Health and welfare units throughout the country have been supplied with sterilizing agents for residents to mix in water, according to the ministry.

Where fruit and vegetables are suspected of carrying cholera microbes, the ministry has recommended they be washed with water containing a little disinfectant.

One third of a glass of ginger in three liters of water is also very effective in killing microbes on fruit and vegetables.

Flies are recognized as the main cholera carriers and garbage should be placed in plastic bags or sprayed to eliminate microbes.

Particular care should be taken to see that flies don't breed in bathrooms or toilets, the ministry warned.

#### DOCTORS DISTRIBUTED POORLY THROUGHOUT COUNTRY

Tehran TEHRAN JOURNAL in English 26 Apr 78 p 3

[Text] Tehran, Tuesday--Iran needs 20,000 more doctors and 50,000 additional hospital beds to bring medical services up to the standard of those in advanced industrial nations.

Pointing this out yesterday, the morning daily RASTAKHIZ added that personnel shortages are aggravated by "the irrational distribution of doctors in the country."

According to the newspaper, a recently-released report shows there are too many doctors concentrated in the capital to the detriment of provincial residents.

"Just as more than 40 per cent of Iran's national income and energy are consumed in Tehran, a similar proportion of doctors and dentists are practicing there or nearby."

For this reason we have been obliged to hire foreign doctors to serve in remote areas, RASTAKHIZ argued.

"As well, most of the nation's 55,000 hospital beds are sited in the capital and the percentage is even higher for specialist physicians."

"Of the 5,500 specialists in Iran, some 3,500 practice in Tehran," the newspaper added.

Just to cater for the present population by providing one physician for every thousand people, Iran would need 35,000 doctors instead of the current 15,000-odd.

And by the same standards, to offer three beds for every thousand people would require 105,000 beds--an increase of 50,000.

"But given that the population is increasing by about one million per year, a plan to provide adequate medical services within one decade

would require the addition of 3,000 doctors and 8,000 hospital beds annually, without mention of ancillary staff and facilities."

Even if such targets were to be achieved, the problems inherent in the concentration of facilities in the national capital would not be solved, RASTAKHIZ argued.

The newspaper concluded by pointing out that inadequacies in the provision of medical services are jointly the responsibility of the Medical Disciplinary Board and the Ministry of Health and Welfare.

## KENYA

### CHOLERA OUTBREAK

Paris LE MONDE in French 12 Apr 78 p 38 LD

[Article by Jean-Claude Pomonti]

[Excerpt] Nairobi--Kenya seems to have halted a cholera epidemic which has killed 356 people in Tanzania (out of 6,265 reported cases) in the past 6 months and which threatened to spread to Kenyan territory. The epidemic, which seems to have started in south Tanzania, reached Dar es Salaam in February and claimed six victims at the end of March.

It reached the Kenyan frontier along the coast. The Kenyans have recorded 122 cases on their side of the frontier, 5 of which were fatal. But the epidemic seemed to be over by the end of March. As a precautionary measure, the Nairobi local authorities plan to remove some 150,000 "squatters" living in slums. Uganda has also taken strict measures to prevent the epidemic spreading to its territory.

Nairobi SUNDAY NATION in English 16 Apr 78 p 1

[Text] Nine fresh cases of cholera have hit Coast Province and victims are undergoing treatment at Port Reitz Hospital, the Deputy Director of Medical Services, Dr. Wilfred Koinange, confirmed last night in Nairobi.

The total number of cholera cases so far diagnosed in Coast Province is 250. Ten of these have died.

Six cases were reported from Wasimi Island, off Shimoni, while individual cases were reported from Mtongwe, Magongo and Changamwe.

Nairobi DAILY NATION in English 17 Apr 78 p 3

[Text] Strict precautionary measures to beat cholera have been launched by the Ministry of Health and Mombasa Municipal Commission after reports that the killer disease has spread in Mombasa.

Three cases of cholera were reported at Kisauni but Dr. E. C. R. Fernandes, Coast Provincial Medical Officer, refused to confirm the outbreak. "Everything is now being channelled to Nairobi headquarters," he said.

Reports from Kwale at the weekend said one person had died of the disease at Tsimba Location in Kwale and was buried last Wednesday.

#### Precautions

Other new cases have been reported from Wasini Island in Kwale District, Kisauni, Mtongwe, and Magongo, Changanwe, areas of Mombasa.

Precautionary measures include the closing of mass food kiosks which do not have ample sanitary facilities. Dirty hotels, meat and cassava roasters have also been asked to close.

Meanwhile, Kanu Mombasa office yesterday appealed to medical authorities to intensify the campaign against the disease to save lives.

"Let us be told all about the disease, where it has broken out and what the people in that particular area should do. These facts should not be hidden from the public," said the party's district chairman, Mr. Sharraf Nassir.

He appealed to wananchi to heed advice given by the medical authorities in an effort to combat the disease which has so far claimed 10 lives in the province, mostly in Kwale District.

Mr. Nassir, MP for Mombasa Central, urged members of the public not to hesitate in reporting suspected cases to the nearest hospital or clinic.

He asked all ward chairmen of the party in the district to help the authorities in the anti-cholera campaign by helping the suspected cases and educating people in cleanliness.

Suspected cases are under observation at the Port Reitz Hospital, Mombasa, and in other treatment centres at Kwale District.

So far 250 cases have been diagnosed in the province.

The deputy principal of Matuga District Development Centre in Kwale has announced the suspension of courses or seminars involving people from areas hit by cholera such as Vanga, Lungalunga, Msambweni and Kikoneni.

Nairobi DAILY NATION in English 20 Apr 78 p 1

[Text] A cholera victim has died and four others are being treated at Mombasa, Minister for Health Mr. James Osogo said yesterday.

He ruled out any danger of the disease spreading and said all travel agents had been instructed to report immediately anyone who may be a cholera suspect.

So far, 255 cases of cholera have been diagnosed in Coast Province. Kwale is the worst hit area.

Nairobi DAILY NATION in English 1 May 78 p 12

[Text] KNA--Muslims living in cholera-stricken areas of Kwale District have been told that measures imposed to curb the disease do not contradict their religious principles and pattern of life.

They were also given an assurance that any cholera suspect who went to a health camp would be treated.

The assurances came from the Chief Kadhi of Kenya, Sheikh Abdulla Farsy, and the Kwale District Medical Officer of Health, Dr. Mohammed, when they addressed barazas at Shimoni and Wasini Island at the weekend.

The Chief Kadhi said the Government, under the wise leadership of President Kenyatta, had provided tremendous services to wananchi. It was up to them to follow instructions, especially in health matters, if these services were to succeed.

He reminded the people of the Koran teaching requiring people to be clean and healthy to serve God, and urged them to listen to their leaders' instructions.

Dr. Mohammed said "prevention is better than cure" and said that although medicines were available it was better not to be affected by diseases.

He warned that the cholera bacteria was quick, to affect the body and urged wananchi to keep their hands clean, boil water before drinking, cover their food, and use latrines.

Dr. Mohammed asked the people of Wasini Island, where the disease was reported, to avoid mixing with people from Tanzania who crossed over in dhows.

He said the situation had improved considerably and if people continued to observe health measures, the epidemic would be wiped out within a few weeks.

DO Mr. Kinuthia Mungai urged people to heed doctors' advice.

He asked them to report to him any problems they may encounter during the cholera campaigns and afterwards.

Health camps have been set up in the areas with a permanent team of doctors and health educators and people should cooperate with them to wipe out the disease, he said.

Nairobi DAILY NATION in English 12 May 78 p 1

[Text] About 180 people have been taken to court since the anti-cholera campaign started in Nairobi three days ago.

And in Mombasa, 85 restaurants, bars and kiosks have been closed down.

In Kilifi, 25 schools have been shut down until they dig proper latrines. All have been told to provide one latrine for every 50 pupils before reopening.

Most of those charged in Nairobi were accused of handling food in open places and failing to keep their clothes and premises clean.

They appeared before city magistrate Mr. H. M. Kitambi. The heaviest fine was imposed on Maina Macharia of Uhuru Estates Butchery. He was convicted on his own plea of guilty on three counts and was fined 650/-: 50/- for wearing dirty clothes while on duty; 300/- for carrying out a business in a dirty butchery; and 300/- for having rotten meat in the butchery.

The city clean-up campaign continues, according to the City Council.

The campaign in Mombasa was launched two months ago.

Medical authorities have cracked down on a number of unhygienic restaurants, dirty kitchens in public places, sellers of roast meat and cassava, and tea and food kiosks.

A spokesman of the Medical Officer of Health told the NATION: "We know there are a number of kiosk dealers who do private business after making sure that council officers are not around, but we will catch them."

Some kiosk operators defied the order to close down, the spokesman said. "We now make sure we destroy whatever they have."

Meanwhile, the six patients who had been attending various clinics and hospitals in the district and who were required this week to urgently report to the public health department have not been traced so far.

Nairobi Domestic Service in English 1000 GMT 23 May 78 LD/EA

[Text] As the cholera epidemic in Swale [sic] is reportedly almost under control, the disease has been reported to have broken out in Kilifi District, and several people are attacked by the disease in the southern division of Kilifi District. Reports from Kilifi say that 13 suspected cholera cases have been under observation at Mariakani health centre, 12 of whom have been discharged. Medical authorities in Kilifi have mobilized all their staff in the campaign against the epidemic. All hotels and open air markets, including butcheries, have been closed at Mariakani and Mazaras. To avoid the epidemic from spreading in the district, similar measures are being taken throughout the district. Several schools without toilet facilities have been closed in the district and the Coast Provincial Education Officer, Mr Muhoya, today went to the area to assess the situation. Public gatherings have been banned. In Mazaras, people have been arrested and charged in courts for defying chiefs order banning public meetings.

#### CHOLERA VACCINATIONS

Nairobi Domestic Service in English 1400 GMT 27 May 78 LD/EA

[Text] The Ministry of Health has issued a statement on requirement for cholera vaccination in the country. As at present only those people who require cholera vaccination certificates, as required by international health regulations, need to be vaccinated against this disease. All other individuals in the country need not be vaccinated. The statement said that, it has been brought to the notice of the Ministry of Health that many doctors are vaccinating people against cholera. These, apart from giving a small section of the community a false sense of security, does not help in the cure of cholera. The Ministry of Health has, therefore, banned the vaccination of individuals against cholera except for those already categorized. All private practitioners in the country are required to stop vaccinating with immediate effect. The Drug Inspectorate of the Ministry of Health will take the necessary action against those practitioners who do not comply with this regulation.

#### MALAYSIA

#### CHOLERA OUTBREAK

Kuala Lumpur Domestic Service in English 0000 GMT 14 Apr 78 BK

[Text] Thirteen more cholera cases have been reported in various parts of Peninsular Malaysia, bringing the total number so far to 236. There have been 10 deaths. A statement by the Ministry of Health said that the



latest cases are two each from Perak, Kedah, Selangor and Penang and one from Trengganu. The number of carriers is still at 231.

Kuala Lumpur Domestic Service in English 1130 GMT 16 Apr 78 BK

[Text] Three districts in Kelantan are to be declared cholera-infected areas. They are Kota Baharu, Pasir Mas and Tumpat. The decision to declare the areas cholera infected was taken following the discovery of 11 cases since Tuesday [11 April]. One of the victims, a 7-year-old girl, died in Kota Baharu. The State Medical and Health Services said six carriers were detected during the same period. The State Epidemic Committee will meet on 17 April to discuss the situation.

Kuala Lumpur Domestic Service in English 1400 GMT 19 Apr 78 BK

[Text] A total of 14 new cases and 26 carriers of cholera were reported in Peninsular Malaysia in the past 24 hours. Seven were from Kelantan, two from Kedah, three from Penang and one each from Perak and Trengganu. Twenty of the carriers were from Kedah, four from Trengganu and one each from Perlis and Kelantan. The total number of cases stands at 303 and carriers at 327. So far 15 deaths have been reported.

Kuala Lumpur Domestic Service in English 1130 GMT 19 Apr 78 BK

[Excerpt] Six more confirmed cases of cholera had been reported in Kelantan, bringing the total of the cases to 21. Two of the victims later died. The total number of carriers in the state stands at 24. The health authorities are setting up measures to prevent the spread of the disease.

Kuala Lumpur Domestic Service in English 1130 GMT 20 Apr 78 BK

[Text] Seven more cases of cholera have been confirmed in Kelantan, bringing the total number of cases in the state to 28. Two of the victims died from the disease last week.

Kuala Lumpur Domestic Service in English 1130 GMT 23 Apr 78 BK

[Text] Nine more cases of cholera have been reported in Kelantan, bringing the total number in the state to 44. Five of the latest victims were adults and the rest children. In Trengganu, no new cases have been reported in the past 24 hours; so far, 10 cases and 36 carriers of the disease had been admitted to hospitals in the state.

Kuala Lumpur Domestic Service in English 1130 GMT 27 Apr 78 BK

[Text] Four more cholera cases have been reported in Kelantan during the last 24 hours bringing the total to 59. An Information Department statement said 18 carriers have also been confirmed, bringing the total to 63.

Kuala Lumpur Domestic Service in English 0000 GMT 29 Apr 78 BK

[Text] Cholera has claimed another victim, bringing to 19 the number of deaths in Peninsular Malaysia. A statement by the Ministry of Health said seven cases and eight carriers were reported over a 24-hour period which ended 28 April. The total number of cases reported so far is 388, including 19 deaths, and the number of carriers 260.

Kuala Lumpur Domestic Service in English 1130 GMT 7 May 78 BK

[Text] Six more cholera cases have been confirmed in Kelantan, bringing the total to 128 so far. A statement by the Information Department said the latest patients were from the district of Kota Baharu, Pasir Mas and Kuala Krai.

Kuala Lumpur Domestic Service in English 0000 GMT 23 May 78 BK

[Text] The Perlis state government has advised tourists intending to visit Padang Besar to postpone their trip as the state has been declared cholera infected. State Secretary Datuk Mansor Bin Osman said on 22 May that this was a safety measure even though the disease was under control. Datuk Mansor, who is also chairman of the State Committee for Control of Contagious Diseases, said that lately many tourists had been flocking to Padang Besar. He added that precautionary measures had been taken to prevent the spread of the disease.

#### INCREASE IN TYPHOID CASES

Kuala Lumpur Domestic Service in English 1130 GMT 19 Apr 78 BK

[Excerpt] An official of the Health Ministry said the number of typhoid cases in Peninsular Malaysia has been going up over the past 3 years. In 1975 the total number of cases was 1,035. Last year it went up to 1,702, with 24 deaths.

## MALDIVES

### MEDICAL AID RUSHED TO MALDIVES CHOLERA VICTIMS

Colombo International Service in English 1045 GMT 8 Apr 78 BK

[Text] The Sri Lanka Government has rushed medical supplies and vaccine to the Maldives following an outbreak of cholera there. An agency report said that some 40 islands were affected and that more than 100 people had died.

Airport authorities in Sri Lanka have been asked to be vigilant about passengers arriving from the Maldives. The director of health services has advised them to isolate suspected cases and report to the health department.

## NEW ZEALAND

### ONE PATIENT TREATED FOR MALARIA

Wellington THE EVENING POST in English 22 Mar 78 p 14

[Text] A 25-year-old Upper Hutt man is being treated for malaria, reports the Hutt district office of the Health Department.

The man, who contracted the disease in New Guinea, before returning home earlier this year, was found to have the disease by a local doctor, the office's senior inspector of health (Mr Colin Comber) said yesterday.

Mr Comber said the man was being treated and there was no possibility that others could be infected because the mosquitoes which carried the disease from one person to another were not found in New Zealand.

Mr Comber said the six cases of infectious hepatitis for the month were reported in different parts of the district and appeared to be unrelated.

Two of the cases were believed to have resulted from the eating of contaminated shellfish.

In one case the shellfish were gathered from Eastbourne near the discharge from the borough's septic tanks. The shellfish in the other case were collected in Gisborne.

#### TEXAS INFLUENZA STRAIN ARRIVES

Wellington THE EVENING POST in English 29 Mar 78 p 9

[Text] The A Texas flu strain has beaten the Russian strain to New Zealand.

The Health Department's deputy director of public health (Dr R. Campbell Begg) said the first case of the Texas strain has been reported by the Auckland virus laboratory.

So far no cases of the Russian strain had been reported. This strain is expected to be common in New Zealand this autumn and winter.

The A Texas strain was first detected in the United States about a year ago.

Dr Begg said that although the strain was new to New Zealand, about half the population would have some immunity against it because of its similarity to the A Victoria strain, which had been common in New Zealand in the past few winters.

The Russian strain could be expected to arrive in New Zealand any time now.

The Russian strain, which is reported from overseas to be mild to moderate in its severity, is likely to hit those under the age of 20 the hardest.

The last similar strain disappeared in 1957. Consequently, people born since then will have no antibodies against the strain.

As in previous years, the Health Department has not recommended anti-flu vaccinations, except where a medical condition might place somebody at special risk.

#### PARATYPHOID CASE

Christchurch THE PRESS in English 6 Apr 78 p 10

[Text] A man has been treated at Wakari Hospital, Dunedin, for paratyphoid, a rare form of typhoid.

The Deputy Medical Officer of Health in Dunedin (Dr B. H. Doherty) said that the man had been treated in the isolation ward and had since been discharged.

All contacts involved had been checked and no other persons with the infection had been found.

Dr Doherty said the man had not been overseas recently, and the Health Department had not found the source of the disease.

Paratyphoid is related to the salmonella group of food poisoning organisms, although it is much rarer and more severe.

There was a case in Auckland some weeks ago but as far as can be established there is no connection with the Dunedin case.

## NIGERIA

### NEW BILHARZIA TREATMENT BEING TESTED

Lagos DAILY TIMES in English 19 Apr 78 p 20

[Article by Alli Hakeem]

[Excerpts] A fortnight ago, at the Ahmadu Bello University, Zaria, the annual joint conference of five Nigerian science bodies: The Societies for Laboratory Medicine comprising of the Nigerian Society for Immunology; The Nigerian Society for Haematology; The Nigerian Society for Clinical Chemistry; Cancer Society of Nigeria and a drug manufacturing firm, Pfizer Limited, spent seven days deliberating on intestinal bilharzia.

Control measures against bilharzia in various countries have not been too encouraging. In Egypt, three methods have been tried all to no avail. In Nigeria, the authorities that okay the construction of irrigation and dam sites have not paid enough attention to attendant consequences. So, there is hardly a control measure. The same goes for Ghana.

But recently, researchers working in the laboratories of a pharmaceutical company, Pfizer, came out with a potent drug for the cure of bilharzia after 10 years of research work.

A spokesman of the team, Dr. R. Foster, who, fortunately had been conversant with the incidence of the disease in Nigeria and elsewhere, told the conference that over 500,000 treatments had been done successfully with the drug in Brazil.

His claim was backed by Professor A. Z. Shafei of the University of Ilorin. The Ilorin clinical trial involved 45 patients: 26 males and 19 females aged between 18 and 47 years.

The drug given by oral route was well tolerated and devoid of side-effects, disclosed Professor Shafei. The cure rate with a single oral dose was 81.3 per cent. Post treatment reduction of egg count was 93.7 and 95 per cent for men and women respectively, within three months follow-up period.

PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

SMALL TOWN REFLECTS RURAL HEALTH CARE PROGRESS

Aden 14 OCTOBER in Arabic 30 Mar 78 p 3

[Excerpts] Tur al-Bahah can hardly be called a town, but it may become so in the future. What is new in the town, and we use the term in a relative sense, represents one part of larger hopes. There is a modern coeducational [elementary] school and a junior high school. My attention was drawn to the hospital which was opened recently by the prime minister and whose cost was underwritten by the Kuwaiti Government as a contribution. The hospital was intended to provide health care services to the people of the center and to the neighboring areas in the northern part of the country. But during my visit there was no attending physician. I was told that the physician, the only one assigned to the hospital, had been transferred to another hospital and that a replacement would soon arrive. I wondered in the circumstances whether the hospital was worthy of the name. There was no question but that the facility was sorely needed in the area, particularly in view of the report by Yusef Ahmad, the hospital's assistant director, of rampant tuberculosis, malaria and malnutrition among the inhabitants. The hospital, if we can use the term, has no laboratory or X-ray machines. Its services are quite limited, and we hope the Ministry of Health would soon take measures to correct the situation.

Some may consider a hospital a trivial matter, unworthy of so much attention. But a hospital in a rural area where disease is rampant, and where the only treatment is branding by fire, is an important matter. How does a woman who had come to the hospital for the first time feel when she lies here waiting for treatment? It takes a great deal of effort to convince a woman to leave her home and come to the hospital. How does the woman from the village, any village, feel when she brings her child to be cured? These are new experiences for the inhabitants and represent the first steps in the direction of learning about medical care and health measures. Women, in particular, find it difficult to expose their bodies to doctors for examinations and injections. This is now becoming possible gradually and awareness of the importance of medical care is improving. Infant mortality and death in delivery will soon diminish.

I asked a woman patient how she felt about her treatment. "It is good and free," was her response. It was her first visit to a hospital.

A great deal of credit must go to the 17 male and female nurses working at the hospital. They still live in the pediatric section pending the completion of resident quarters.

I asked the assistant director of the hospital about other deficiencies. His most urgent need was for additional nurses. "Women nurses," he told me, "were better able to understand and handle women patients." They also needed a laboratory, X-ray machines and technicians. We urge the Ministry of Health to respond to their requests.

#### PEOPLE'S REPUBLIC OF CHINA

#### HYGIENE CAMPAIGNS PREVENT DISEASE IN TANGSHAN

Peking NCNA in English 1204 GMT 17 Apr 78 OW

[Text] Shihchiachuang, 17 Apr (HSINHUA)--Thanks to measures taken to prevent infectious diseases and constant hygiene campaigns, no infectious disease has become prevalent in the Tangshan area in north China following the big earthquake of July 1976. Moreover, the incidence of infectious diseases in 1977 dropped by 46.8 per cent to the lowest incidence in the past ten years.

In the course of the spring hygiene campaign which began in early March this year, more than two million tons of garbage and waste have been cleared from the Tangshan area.

Since July 1976 the people of Tangshan have been zealous in clearing debris and tidying the city, laying stress on restoring sanitation facilities. In the neighbouring rural areas wells, latrines, pigsties, stables, stoves and ovens have been upgraded. According to rough estimates over six million people in the Tangshan area have plunged themselves into environmental improvement. Eight million tons of garbage and night soil have been removed. Tangshan city has built 7,700 garbage pits. The network of tap water pipes and sewage conduits has been repaired. Wells, latrines, pigsties and stables in the rural areas near Tangshan have also been restored to the condition they were in prior to the earthquake. Ninety per cent of production brigades in the heavily afflicted Fengnan County have sunk pump wells for both drinking and irrigation purposes.

Since the quake the public health departments in the Tangshan area have convened many meetings to investigate epidemics which had occurred in the locality in the past and studied problems which might possibly arise. They then took measures to prevent infectious diseases likely to occur in the summer. A mass hygiene campaign was mounted during the first winter and spring following the quake. All the seven million people of the Tangshan area were given preventive inoculations in the winter of 1976 and the summer of 1977. Departments have paid special attention to the protection of water sources, the sterilization of drinking water and to

sanitation. Centres have been set up in urban and rural areas to detect and report signs of infectious diseases. Itinerant inspection and advisory teams have also been set up.

## RHODESIA

### MALARIA REPORTS

Salisbury THE RHODESIA HERALD in English 12 Apr 78 p 3

[Text] Greater Salisbury has not suffered a single case of malaria despite the abnormally heavy rains which provided ideal conditions for the mosquitoes, and the carriers of the disease have been almost eradicated, said the Medical Officer of Health, Dr J. C. A. Davies.

Comforting though this situation may be to Salisbury residents, it has not come about by accident. Behind the successful elimination of the disease lies a carefully planned campaign by a specialist team in the Municipality's Department of Health.

In charge of the battle against the mosquito is a veteran malariologist, Mr R. D. Stonard. From an inconspicuous building in the grounds of Harari Hospital, he deploys his team of up to 55 men, who cover every inch of commonage in the city's 386 km<sup>2</sup>, regularly spraying all the likely mosquito breeding areas.

#### Precision

It may seem an impossible task to cover such a huge area effectively, but drawing on the experience he gained in combating malaria in East Africa, Madagascar and the Far East, Mr Stonard has organised his campaign with military precision.

He explained that Greater Salisbury was split into two main areas--the north-east and south-west. These in turn were divided into smaller areas, in which each of his sprayers was assigned a beat.

"We trained these chaps ourselves and most of them are old hands," he said. "They know what to look for and where to spray.

"The spray we use is a preparation called Abate, which is a larvicide. As the name implies, it is effective against the insect in its waterborne larval state.

"We therefore spray pools, dams, vleis, etc., where the mosquitoes are found to be breeding, and the residual effect of the chemical provides control for at least a week before we have to spray again."



## Carrier

He said there were dozens of varieties of mosquito--many of which were prevalent in the Salisbury area--but only one, the Anopheles Gambiae, was the vector, or carrier, of malaria.

As in the case of all species, he said, it was the female which was the villain because it was she who fed on human blood and caused the irritating "bite," while the male contented himself with nectar.

He explained that while his team covered all the Municipality's commonage, private land was the responsibility of the owner.

"Every property-owner can do his bit to keep down all species of mosquitoes by regularly looking for and eliminating possible breeding places," he said. "It takes only a few moments to look around your property once a week and get rid of any empty tins, bottles, old tyres--in fact anything that will hold water. If there is no water, mosquitoes cannot breed."

Salisbury THE RHODESIA HERALD in English 24 Apr 78 p 3

[Text] Rhodesia's Lowveld area bordering on South Africa has not had its malaria control operations interrupted by terrorism, nor is the malaria incidence in the area high, Dr Eric Burnett-Smith, the Secretary for Health, said.

Dr Burnett-Smith was replying to claims made by Dr R. J. Coogan, Cape Town's medical officer of health, who was reported in the HERALD on Thursday as saying there had been an increase in malaria in the northern Transvaal because of unrest in Rhodesia and other States bordering South Africa.

He claimed there had "definitely been a slackening in malaria control since the escalation of unrest" because of the danger of entering some areas.

Dr Burnett-Smith replied that though control was "not what it was in the past" in some areas because of terrorist activity, this did not apply to the parts bordering South Africa.

"There has been no interruption in malaria control work in the Lowveld area bordering with the northern Transvaal," he said. "In this particular area we undertake our work after close consultation with the malaria control services of South Africa."

To Dr Coogan's assertion that the Rhodesian malaria services were no longer able to spray stagnant pools regularly Dr Burnett-Smith said this

method--used before the Second World War--was "completely ineffectual," and had been scrapped years ago.

Instead, the walls of dwellings were sprayed with residual insecticide. "Mosquitoes come into the houses, rest on the walls and are killed," he said.

Dr Burnett-Smith also noted a discrepancy between the Rhodesian recommended dosage of anti-malaria drugs and that recommended by Dr Coogan for people entering malaria-infested areas. Dr Coogan had advised travellers to the northern Transvaal to begin dosing themselves one week before departure to the area, during their stay there, and for one week after leaving.

#### Pills

The Rhodesian Ministry of Health's recommendation was that pills should be taken a week before entering the area, during the stay and for a full month after leaving the area.

Dr Burnett-Smith said the malaria season was now at its height, and that throughout the country there had been an increase in malaria this year due to the extensive rainy season.

But, referring to the Lowveld area bordering on the northern Transvaal, he said: "We haven't got very much down there now."

#### SAUDI ARABIA

#### ANTIMALARIA ACTIVITIES; ANTIBILHARZIA CAMPAIGN

Riyadh AL-RIYAD in Arabic 15 Mar 78 p 2

[Text] Studies are underway for opening the antimalaria center which will be inaugurated in al-Qunfudhah soon. A responsible official at the Ministry of Health made this statement to AL-RIYAD. He added that groups from different malaria centers have been charged with going to the areas where complaints abound, especially about malaria. Such areas are al-Qunfudhah, al-Laban and al-Ta'if. They are to observe the epidemic cases in the area closely. The center's function will be to combat the areas where malaria-carrying mosquitoes thrive, to eradicate epidemic cases, to examine blood samples, to treat malaria patients and to follow up with their treatment.

[Article by Tal'at Wafa]

[Excerpts] A major agricultural renaissance has taken place in our country. The green terrain has been expanded, and large quantities of water have been made available. Hence the chance for the spread of intermediary snails has increased, and hence also the disease of bilharzia has spread. But, fortunately, most sources of water in the kingdom are independent of each other; this is quite unlike those states where rivers, their tributaries and their connected branches abound. Therefore, snails are not spread and moved from one place to the other by the water current, and the process of exterminating the snails becomes possible as soon as a comprehensive plan for doing so is available.

The most important feature of a plan to fight and eradicate bilharzia is the preparation of a comprehensive survey of all parts of the kingdom for the purpose of identifying the housing concentrations and the water sources, examining these water sources in order to locate the snails or determine the sources of the disease and then completing the process of attacking the snails. Afterwards, the maintenance process is continued to ascertain the safety of the water, and follow-up is carried out on concentrations of citizens to make sure that none of them is a positive case. There is a time period for this.

Close observation experiments that were carried out by the ministry in past years through the bilharzia centers it established have proven that there are some disease-carrying snails in some parts of the kingdom. As a result of the major agricultural revolution which the government of his majesty the king is fostering, the agricultural terrain has been expanding, and dams that provide huge quantities of water have been built. Opportunities for the proliferation of intermediate snails have thus increased and, consequently, the opportunities for spreading bilharzia. In addition, opportunities for individuals to travel from one part of the kingdom to another have [also] increased.

Hence began the considerable interest in restricting the spread of this disease and eradicating it by laying down scientific plans toward that end.

Director General of Preventive Medicine Dr Hashim al-Dabagh says that the Ministry of Health has adopted the following scientific basis in its plans.

1. All the citizens in the kingdom are to receive a comprehensive examination, and those who are sick are to be treated until they recover.
2. The intermediate carrier, the snail, is to be exterminated wherever it can be found.

It is fortunate that the kingdom is different from the other states which are suffering from the spread and the endemic status of this disease. In contrast with countries where rivers and their connected tributaries and branches are widespread, the water sources in the kingdom are independent of each other. These help expedite the process of spreading and transmitting the snails from one place to the other by means of the water current. The extermination of snails [in the kingdom] is therefore possible if the necessary capabilities for implementing the complete plan are available.

#### The Previous Plan

Because the magnitude of the problem in the kingdom with regard to this disease was not previously known, an Antibilharzia Department was established in the ministry in 1390 Hijrah. Ten centers in Mecca, al-Madinah, al-Jawf, Abha, al-Ta'if, Jayzan, al-Riyadh and Najran were established, and an information center was established in Khaybar in al-Madinah and in al-Riyadh. Exploratory operations that have been conducted by these centers have proven that this disease exists and is widespread. Thus a comprehensive project has been prepared to achieve the following objectives:

1. A comprehensive survey of all parts of the kingdom is to be conducted for the purpose of identifying the housing concentrations and the water sources, which will be tested in search of the snail; identifying the sources of the [disease-carrying snails]; and compiling the supporting data for the disease and the intermediary carrier.
2. The stage of attacking the snails is to be completed by treating the sources of the impure water with snail pesticides, reexamining the water to insure their freedom from snails, exterminating the snails completely and treating those who are afflicted with the disease until they are fully recovered.
3. The stage of safeguarding the sources of water to insure their safety is to continue. Follow-up on citizens' concentrations is to be conducted in order to ascertain that they are free from any positively diagnosed case.

We are hoping that implementation of this plan will be completed during the determined period of time as follows:

1. In the first year we will begin with a comprehensive survey of one-third of the total area of the kingdom.
2. In the second year we will survey the second third of the kingdom and we will begin the stage of attacking the snails in the first third of the kingdom.

3. In the third year surveying the last third of the kingdom will be completed; the attack on the snails in the second third of the kingdom will be completed; and a follow-up of what was completed in the first third of the kingdom will be carried out.

4. In the fourth year the attack [on the snails] in the last third [of the kingdom] will be implemented. Follow-up on what was completed in the first and second thirds of the kingdom will be completed.

5. Implementation of the stage of safeguarding both the citizens and the sources of water is to begin with the fifth year. It is to continue afterwards to protect the kingdom from every epidemic case.

There can be no doubt that implementation of this scientific plan requires concentrating on finding the staff positions that will implement it and the required furnishings and equipment. The Ministry of Health will spare no efforts toward achieving prosperity for the citizens and for the country under the auspices of the judicious government that is led by his highness the king and his loyal crown prince.

These are some of the activities of the Antimalaria Department for the years 1397-1398 Hijrah:

1. The director of the Antimalaria Department participated in the meeting that was held in Istanbul, Turkey to coordinate the antimalaria efforts between the Kingdom of Saudi Arabia, Jordan, Iraq, Syria, Turkey and Lebanon. The next meeting will be held at the end of this year, 1398 Hijrah.

2. A WHO group has visited the southern area to investigate the malaria situation in the area and to conduct the necessary entomological and pathological studies so that a comprehensive plan can be drawn up to fight malaria in the southern area and in the common border areas with the Yemen Arab Republic. The WHO group visited Abha, Najran, Mahayil and Jayzan.

3. The Malaria Center at al-Qunfudhah will be inaugurated soon, God willing.

4. There have been several spraying campaigns in the areas of Najran and Tuhamah 'Asayr. Preparations are currently underway to spray the areas of Jayzan, al-Madinah al-Munawwarah with long-lasting pesticides.

5. The students at the Health Institute in al-Riyadh are to be trained in the theory of antimalaria activities at the institute and in the practice of antimalaria activities in the eastern region. They will also be trained in the areas of the south.

6. Groups from the different malaria centers are to be charged to go to areas like al-Qunfudhah, al-Layth, al-Ta'if and others where complaints, especially from malaria, abound so that the infectious cases in the area can be discovered.

7. The malaria centers are to carry out the routine activities such as attacking the locations where malaria-carrying mosquitoes breed, diagnosing and investigating the disease, analyzing blood samples, treating malaria patients and following up on this treatment.

#### SINGAPORE

##### MALARIA, DENGUE FEVER, TYPHOID STATISTICS

Singapore Domestic Service in English 2330 GMT 15 May 78 BK

[Text] The Environment Ministry said there were 184 cases of malaria in the republic last year, the lowest in the last 15 years. In its annual report for 1977, the ministry noted that there was a higher incidence of dengue hemorrhagic fever, with 92 cases compared to 30 in 1976. There was also an increase in typhoid cases to 216 up from 141 in 1976. Among the more than 7,000 schools, 91 were found in 1977 to be infected with gastrointestinal organisms and 1 had some typhoid carriers.

#### SOUTH AFRICA

##### ANTIMALARIA DRIVE STEPPED UP

Johannesburg THE STAR in English 20 Apr 78 p 5

[Text] The Department of Health has had to intensify its anti-malaria measures to prevent an influx of infected mosquitoes and human carriers, particularly across the Mozambique border, into South Africa.

Malaria control in Mozambique has deteriorated since the Frelimo take-over but the incidence of the infection in the malaria areas of South Africa has nevertheless dropped since last year, presumably as a result of the department's intensified surveillance programme.

"We are not only dealing with infected mosquitoes that come across the border, but also with human carriers who can infect our own mosquitoes," a spokesman for the department said today.

"Labourers who come here to work on the mines are treated automatically, but our teams have to visit the farms in the regions concerned to find possible carriers who come across the border as farm workers."

The official said his department was getting excellent co-operation from the Swaziland Government and spraying programmes in the border areas between the two countries could be co-ordinated.

At present there was no such collaboration between South Africa and Mozambique, however.

Yet the situation was under full control and the present increased incidence was seasonal and expected.

#### Seven Patients

It was reported yesterday that four malaria patients had been admitted to the Johannesburg General Hospital and three to the Rietfontein Hospital in the past week.

One patient died at the General and another is still seriously ill in the intensive care unit. Both contracted cerebral malaria.

In Cape Town the medical officer of health, Dr R. J. Coogan, said there had definitely been a slackening in malaria control in Rhodesia and other border states since the escalation of unrest. Stagnant pools and other mosquito breeding places were formerly sprayed regularly. "Now, because of the danger of entering some areas, this has not been done," he said.

#### INFLUENZA HITS SCHOOLS

Johannesburg THE STAR in English 22 May 78 p 13

[Text] Flu has started to take its toll in Johannesburg schools as winter bites. One Pretoria school is facing its highest absence rate.

While spokesmen for Johannesburg schools said today the number of pupils staying away from school this winter had been normal or a little higher than normal, the Afrikaanse Hoer Seunskool in Pretoria had an absence rate of about 15 percent last week.

The school hopes attendance figures will improve this week. A school spokesman said today it appeared the Lynnwood area of town, including Pretoria University, and the school, appeared to be particularly hard hit by a light form of flu.

Johannesburg schools have had no "epidemic" outbreaks of illness so far, but a number of schools had higher than normal absence rates about a week ago. Athlone Boys' High School had its early winter peak rate last week.

Parktown Boys' had to cancel rugby matches with King Edward VII after Parktown players fell ill two weeks ago.

The Parktown teams had been in Natal for matches during the weekend following Ascension Day and apparently picked up flu there, a school spokesman said.

#### VENEREAL DISEASE ON INCREASE

Johannesburg THE STAR in English 24 May 78 p 20

[Text] Gonorrhoea, most common venereal disease in the world, has now become as resistant to conventional antibiotic treatment in South Africa as in the United States, where the process has been causing concern for several years.

At the same time the incidence of the disease has increased markedly in this country, as in the rest of the world, particularly among younger people.

A study by the Department of Microbiology at the SA Institute for Medical Research and Wits has indicated that as many as 10 percent of people with gonorrhoea harbour these resistant organisms.

They do not respond to conventional treatment with the antibiotics penicillin, tetracycline and erythromycin--mainstay of gonorrhoea therapy.

"This makes for a potentially serious situation," says Professor Hendrik Koornhof, head of the department.

"These resistant organisms are still sensitive to an antibiotic called spectinomycin, but it is not yet regarded as the drug of choice and cannot replace penicillin."

#### SYRIA

#### CHOLERA THREAT

Valletta JAMAHIRIYA MAIL in English 22 Apr 78 p 12

[Excerpt] The Syrian Physicians' Syndicate has warned that Syria could be hit by cholera during the coming summer or next autumn, and has called upon the Health Ministry to take precautionary measures, and to conduct a weekly examination of the water supply in the country.

In a report, the syndicate stressed the necessity for continuous vaccination before summer, the necessity of examining travellers to the country and the preparation of ambulance centres provided with staff and medicine.



## TANZANIA

### RABIES EPIDEMIC

Paris LE MONDE in French 12 Apr 78 LD

[Article by Jean-Claude Pomonti]

[Excerpt] A rabies epidemic has hit the Bariadi District in the West Tanzanian Mwanza Region. One person died in February after being bitten by a dog and 65 others have been affected.

### CHOLERA OUTBREAK

Dar es Salaam Domestic Service in Swahili 1800 GMT 22 Apr 78 LD/EA

[Text] Zanzibar--Ndugu Aboud Jumbe, chairman of the Zanzibar Revolutionary Council, has ordered the closure of all dirty government and private shops and stores. Ndugu Jumbe has called for concerted efforts to be made to clean up these shops and stores so that people do not experience hardship in procuring essential commodities.

Ndugu Jumbe made the order this morning while addressing the ministers of health and internal trade, the Tanzanian Revolutionary Party chairman for the town's west region and the minister of state, in his office.

He said this was not the time to compile reports, but to take steps to combat cholera effectively.

Meanwhile, reports from Zanzibar say that 170 cholera patients have so far been admitted to V. I. Lenin Hospital. One died in the hospital today.

Zanzibar Domestic Service in Swahili 1500 GMT 23 Apr 78 LD/EA

[Text] Reports from the V. I. Lenin Hospital say that from yesterday at 0600 to 0600 today 14 new cases of cholera were diagnosed and admitted to the hospital. The reports also said that during the same period 5 cholera patients died; another 9 were released after treatment. The number of cholera patients still at the hospital at 0600 this morning was 70. A report on the cholera situation in the rural areas said that at Mkokotoni Center from 1800 yesterday to 0600 hours today only one cholera case was diagnosed.

Dar es Salaam Domestic Service in Swahili 1800 GMT 22 Apr 78 LD/EA

[Text] Musoma--The Arusha-Mara regional boundary has been closed as a result of an outbreak of cholera in Arusha region. The director of regional development in Mara, Ndugu Christian (Kisanji) said all travelers entering or leaving Mara region should possess permits issued to them by doctors. Bus traveling between the two regions has also been suspended.

Lusaka ZAMBIA DAILY MAIL in English 25 Apr 78 p 2

[Text] Dar es Salaam--Cholera has broken out in Tanzania again after officials had announced that a five-month epidemic which killed 300 people was over.

Health officials said yesterday the new outbreak had killed eight people in the Arusha region of northern Tanzania.

This was announced by Arusha regional medical officer, Dr W. Mbagi.

In the north-east region of Lushoto, 10 people have died in remote villages of suspected cholera. Three are in a critical condition.

Communications with the villages have been disrupted by heavy rains. On Sunday night a Land-Rover carrying a medical team to the area overturned injuring the eight occupants and destroying anti-cholera vaccine, the officials said.

The Tanzanian island of Zanzibar is under quarantine because of a cholera epidemic which broke out there three weeks ago.--ZANA/RTR

Lusaka TIMES OF ZAMBIA in English 1 May 78 p 4

[Article by Brown Lenga]

[Text] Dar es Salaam--There are signs that the cholera epidemic in Tanzania is spreading in spite of the money and effort which have been put into the fight against it since it was first reported in the country at the end of last year.

Perplexed medical officials report almost every week that the disease has been contained in one area or other but has broken out in another.

The imposition of quarantines and the suspension of all social activities in the initial stages of the outbreak did not effectively check the spread of the disease.

El Tor cholera, the strain that is hitting Tanzania, is supposed to be a mild form of the disease. It originated in the small Egyptian town of El Tor in the early 1800s when it killed hundreds of people.

So far, according to official sources, El Tor cholera has claimed more than 300 lives in Tanzania, but unofficially, the figure is put much higher and is believed to be around 1,000.

Responsibility for the outbreak is placed firmly with Arab visitors from Saudi Arabia.

Their wealthy host Ali Omari Kiombwe, a resident of the coastal town of Rufiji, about 180 kilometres south-east of Dar es Salaam, was the first victim to die of the disease.

Officials said unhygienic burial methods were the immediate cause of the spread of the malady. They said that after Kiombwe's funeral, meals were served. A few days later, most of those who attended the funeral ceremony and ate the food contracted the disease and died.

It took weeks before medical analysis positively identified the disease as El Tor cholera. Until they did, it was believed that the Rufiji outbreak was merely dysentery and diarrhoea.

Immediately the authorities realised what they were up against a strong medical team was rushed to Rufiji, a quarantine was imposed and heavy penalties prescribed for people who broke it. But in spite of the precautions, the outbreak spread.

Dr Martin Mandara, who headed the medical team, conceded later that the reason they had not had much success in containing the outbreak was due to the apathy of the people.

Most either ignored the quarantine regulations or were not properly treated and preferred to rely on herbs. Some relatives of victims in deep rural areas actually hid patients in the bush where they were treated by local herbalists. Even witchcraft was resorted to.

In Tanga, region commissioner Ngombale-Mwiru threatened that herbalists claiming they would cure cholera would be dealt with harshly.

Realise

Dr Mandara said: "The preventive measures are not really being enforced. In some areas, there has been resistance and apathy on the part of those concerned with quarantine enforcement."

He thought this was because cholera was a comparatively new disease to Tanzania and people did not realise the importance of taking steps to contain it.

When medical officials realised the seriousness of the outbreak, they ordered the closure of all schools, the suspension of rail and bus services upcountry, and recommended stiff penalties, including jail and fines, for people who violated quarantine and health regulations.

The 600,000-odd residents of Dar es Salaam were virtually cut off from the rest of the country. Nobody was allowed in or out without a valid medical certificate indicating that he or she had been inoculated against the disease.

Supplies of green vegetables rapidly dwindled and unscrupulous dealers raised prices and those for other essential goods not regulated by the country's price commissioner.

Minister of Health Dr Leader Stirling blamed quarantine breakers for the spread of the disease but he thought it was now on the retreat and would soon be wiped out if people stayed put.

Letters in the Press had accused his ministry of taking piece-meal measures. The writers thought mass inoculation was the solution. But Dr Stirling replied: "Mass inoculation is not a panacea because it offers a false security to people and they do not bother to observe health regulations." In any case inoculation was only 50 per cent effective.

Brought

The authorities are relying on tetracycline to combat the disease. Sixteen tonnes of the drug has been brought in from the African headquarters of the World Health Organisation in Brazzaville, Congo.

Private medical operators are charging high fees for anti-cholera jabs in Dar es Salaam and the outbreak has been a money-spinner to private clinics, although the government has warned that certificates issued by these clinics are invalid.

So far, the cost of the anti-cholera campaign has not yet been revealed, but one source said it must run into millions. "We cannot at this time know the exact figure nor the number of dead because cases are still being recorded," he added.

Although much of the country's tourist areas had been relatively unaffected, the closure of schools, disruption of rail and bus services and the economic inconveniences brought about by the quarantine regulations have had an effect on the economy of the country.

Observers say that the authorities have learned a lesson. They now realise that they must at all times have well-defined standby programmes ready to fight any future epidemic.

In a message addressed to Tanzania's neighbours, Kenya, Uganda, Zambia, Mozambique, Malawi, Rwanda and Burundi, a senior medical officer said: "It is hard to predict whether our uninvited visitor from Arabia will cross over to our neighbours, but it seems he is poised to visit places beyond our borders."--GEMINI

Paris AFP in English 0119 GMT 4 May 78 PA

[Text] Dar es Salaam, May 4 (AFP)--Police reinforcements have been (?sent) to Kibosho division, Moshi, in northern Tanzania, to help enforce the cholera quarantine there, the Tanzania news agency SHIHATA reports. The agency said yesterday that five people had died of cholera at Kibosho division in the week past and 15 more were under treatment. The reported cholera death toll is about 500 in seven months. Last month the first deaths were reported in Zanzibar.

#### THAILAND

#### CHOLERA OUTBREAK

Bangkok Domestic Service in Thai 1300 GMT 15 Apr 78 BK

[Text] The chief of the health division, Public Health Ministry, reported that cholera is under control in the provinces where it first broke out--Samut Prakan, Samut Sakhon and Samut Songkhram--but it has spread to other provinces in the country. According to the latest report on 12 April, some 2,541 people have contracted the disease and 90 of them have died. At present, 51 provinces have been hit by the plague.

Bangkok BANGKOK POST in English 27 Apr 78 p 1 BK

[Text] An anti-cholera campaign is being launched in the Bangkok metropolis and neighbouring Samut Prakan, Samut Sakhon and Samut Songkhram as the El Tor strain of cholera has spread to 53 provinces across the country. The epidemic has so far claimed 98 lives out of 2,829 known cases. The Director-General of Contagious Disease Control Department, Dr Manat Unhanan, said the effort which will cost the department five million baht, was concentrated in the city and the three coastal provinces in the vicinity--the areas hard hit by cholera. The campaign followed reports that 60 percent of the known cases were from these provinces. Dr Manat said small government campaign units will be posted in every township in the four provinces to look for patients suspected of contracting cholera, conduct laboratory experiment of the excrement of family members of the patients and distributing pills to the people.

Bangkok Domestic Service in Thai 1300 GMT 5 May 78 BK

[Text] Since its outbreak in Thailand last October, cholera has now spread into 53 provinces. As of April 2, 971 people have contracted the disease and 102 have died. The record of victims is the highest in 15 years. This was revealed by the director general of the Communicable Diseases Control Department who said the trend in cases has been declining since the middle of April.

Bangkok BANGKOK POST in English 11 May 78 p 3 BK

[Excerpt] Three villagers died of cholera late last week and many are suffering from the disease in Fang District of Chiang Mai, provincial public health sources reported yesterday. The sources said cholera was found in Mae Ngon Village and 50 villagers have gone to the district health centre for vaccination.

#### TURKEY

##### ANTIMALARIA MEASURES

Istanbul AKSAM in Turkish 19 Apr 78 p 5

[Text] THA--A house by house campaign of disinfection has begun in Adana, where one out of every four persons has malaria. According to information given by the authorities, 308 persons who have undergone the necessary training, will carry out the spraying. In order to carry out this task, 44 teams of 7 persons each have been established and dispatched to the various localities in Adana. In addition, 24 malaria eradication chairmen from other provinces are also participating. During this campaign, bodies of water situated outside of houses and places where canals have overflowed will be sprayed. In addition, the spraying will continue from the air should it become necessary.

#### UGANDA

##### ABANDONMENT ON ISLANDS ADVOCATED TO CLEAR UP LEPROSY

Kampala UGANDA WEEKLY NEWS in English 19 Mar 78 p 6

[Letter by S. K. Aruo in the column "Weekly Mail Bag"]

[Text] To the editor: Sir, G. Fitzorach must be highly congratulated on his article about leprosy (VOU--VOICE OF UGANDA, Jan. 7, 1978). He

did his research and home work very well and presented the matter in a way that should be understood by all those who know the English language. In fact, this article should be translated into Swahili for the benefit of those who cannot read the VOICE.

But what interests me is not that leprosy is curable or that parents with leprosy can produce children without the disease. My main interest is what can be done to eradicate the disease so that the future generations can see it only in pictures.

Leprosy is a calamity in our society. It causes permanent damage. It causes disability. A person who has lost his digits does so for ever. He cannot dig, he cannot write, he cannot milk cows. He is useless to society. His contribution to the economic development or economic independence of the country is nil. He will remain a beggar if there is nobody or no institution to look after him. He is a national liability.

In the olden days, even before the advent of western civilisation, our people knew that leprosy was a bad disease. A leper was not allowed to mix with clean people. His hut was built some 100 to 200 metres away from the homestead. A person who fed him left the food some 10 to 20 metres away from the hut, from where the leper would collect it.

After eating the leper would return the vessels to the same area from where the attendant would collect them without touching them with her bare hands. The vessels would then be dipped in boiling water to kill the germs since active cases of leprosy often left traces of blood on the vessels.

Some years ago many leprosy camps were built in this country in convenient places along the access roads. Each camp was manned by leprosy assistants and leprosy attendants who fed and treated lepers who were sent to these centres. Because of the good treatment that they received in the camps many lepers went there voluntarily.

By this process we were sure that this country would eradicate leprosy in much less than 100 years, probably in 50 years.

But today out of either negligence or ignorance, arrogance or something else, most of the camps have collapsed and have been abandoned. In fact, one such camp is being converted into something else. The lepers have gone back to their places and are mixing freely with healthy people. [They are] not getting any treatment.

[In short,] they have become [much more] dangerous than be-[fore the] development of the [modern] methods of treatment. [We have] to eradicate le-[prosy and in] this country we have to be ruthless. We have to do what the Australians did to eradicate the disease. It sounds cruel and it appears cruel.

Australians screened the whole population and removed all the lepers and suspects to an island in the Coral Sea where they were left to perish. Australians did the same for plague. Since then Australia has never known plague or leprosy.

Uganda could do the same. There are several convenient islands on Lake Victoria for the purpose. These islands should be vacated and all lepers taken there. Modern methods of screening and diagnosis would probably not allow a single leper to escape.

It sounds cruel, but if we have to develop a healthy Uganda for our future generations we need able-bodied healthy people to do so, but [as published].

#### NEW FORM OF GONORRHEA

Johannesburg THE STAR in English 12 May 78 p 10

[Text] Nairobi--President Idi Amin has warned Ugandans of a new and deadly form of gonorrhoea.

He says it has been brought into Uganda from neighbouring Tanzania, Kenya and Rwanda.

The first sign of the disease was the falling out of hair, and death followed soon after, he told a conference of doctors.

Women with inviting eyes from Tanzania, Kenya and Rwanda, he claimed, were the direct importers of the disease and men who went with them would "suffer to the end."

#### UNITED ARAB EMIRATES

##### REGIONAL CHOLERA DISCUSSIONS

Abu Dhabi AL-ITTIHAD in Arabic 31 Mar 78 p 1

[Text] Dr Hashim al-Dabbagh, director general of preventive medicine in the Saudi Ministry of Health, arrived in Abu Dhabi yesterday to meet with officials in the Central Department of Preventive Medicine in the Ministry of Health.

The talks are scheduled to cover a review of steps taken to implement the decisions of the Arab ministers of health of the Gulf states in the third session in al-Doha about combating cholera and organizing the fight against epidemic diseases which spread among the countries of the area.



It should be noted that the Ministry of Health has prepared a comprehensive study on the possibilities of combating cholera and infectious diseases in the area.

## VIETNAM

### AN GIANG PROVINCE COMBATS OUTBREAK OF PLAGUE, CHOLERA

Ho Chi Minh City TIN SANG in Vietnamese 5 Mar 78 p 3

[Text] The general public health station in the town of An Phu, Phu Chau District, An Giang Province, recently worked with the Chau Doc hospital's disease eradication team strengthening the immunization network thereby driving back a recent outbreak of plague here.

During the past week an outbreak of plague occurred at the Phuoc Hung village market in the town of An Phu, Phu Chau District, infecting more than 60 people and killing 4, old and young alike.

In addition, the Red Cross Association of Phu Chau District, An Giang Province, sent two teams of Red Cross assault youths to coordinate with the town's public health service and the district public health service in immunizing 20,600 people around the area where an outbreak of cholera had occurred, completely blunting the outbreak in Phu Chau District. The association also arranged acupuncture treatments for nearly 500 people and set up an oriental medicine bureau to fill 3,500 prescriptions, examine 4,206 people, treat 120 cases and dispense free of charge more than 10,000 doses of medicine of varying kinds to the people.

### HO CHI MINH CITY RESIDENTS INOCULATED AGAINST TYPHOID, PLAGUE

Ho Chi Minh City TIN SANG in Vietnamese 10 Mar 78 p 3

[Text] In the movement to prevent dry season epidemics, the entire city has had 2.6 million people receive TAB and plague inoculations.

Of this number approximately 2 million (76 percent) city residents have been sufficiently inoculated to be basically immunized.

More than 90 percent of the people in Phu Nhuan and Go Vap districts and the 1st and 3d precincts have been inoculated. TAB and plague inoculations are now being given in several districts and will be finished at the end of March.

The hygiene and epidemic prevention station calls on the people to go to ward public health stations for inoculation as a precaution against dry season epidemics.

The city is now preparing for the upcoming rat extermination phase using zinc phosphorous which will be conducted on two consecutive nights. Drawing experience from last year's rat extermination phase, people should actively respond to the upcoming rat extermination campaign in order to achieve higher results.

## ZAMBIA

### SCABIES, MEASLES OUTBREAKS

Lusaka TIMES OF ZAMBIA in English 2 Apr 78 p 4

[Text] Copperbelt provincial medical officer, Dr Hershed Patel has promised to launch investigation into reports of an outbreak of scabies in Luanshya's Twashuka shanty compound.

Dr Patel was commenting on reports that in Twashuka residents were complaining about the disease and lack of medical facilities in the area.

The squatters said that the water they were drinking was unhygienic.

They also complained that the clinic at Mikomfwa was too small to cater for the growing population of Twashuka and Mikomfwa townships.

At a meeting addressed by member of the Central Committee, Mr Fines Bulawayo last week, many people were seen scratching themselves.

But the hardest-hit are children and the residents expressed fear that since most of the victims were school children they were likely to spread the disease to Mikomfwa.

Dr Patel said that he had failed to get in touch with the district medical officer in Luanshya due to poor telephone communications.

He however, said that a team of medical officers would go to the area to launch an investigation and then determine what measures should be taken to fight the disease.

Lusaka TIMES OF ZAMBIA in English 12 Apr 78 p 1

[Text] About 400 children have been attacked by measles and scabies in Kitwe district over the past month.

Of the estimated figure, three are known to have died at KMB bus stop while others have died in transit to Kamfinsa Mobile Unit clinic from Zamtan, Zambia and other Kitwe townships.

Scabies has also been reported in Ndola and Luanshya townships.

The estimates came to light during a snap survey of Government clinics which showed entries of more than 40 cases at each clinic from the beginning of last month to date.

Medical officials in Kitwe said there had been an increase of measles in the past three years but the mortality rate had remained about ten per cent of all cases brought to the attention of health institutions.

They said most measles cases were in townships and shanty compounds where many children were undernourished because some parents did not exercise proper childcare.

Kitwe police confirmed the death of three children at the KMB bus stop after attending treatment at the Kitwe hospital; and Kamfinsa prisons chief, Mr J. K. Mwale said he had been informed of the death of some children while being brought to the clinic by their parents from Zambia and ZamTan compounds.

But director of medical services, Dr Joseph Kasonde, said in Lusaka that the problem of measles was already known by the Ministry of Health as it occurred all the time.

"Even the problem of scabies is also known, and the chief pharmacist in Ndola has contacted us requesting appropriate medicine to treat it," he said.

Dr Kasonde added that medicine to treat both measles and the scabies was available in addition to the immunisation programme which was also taking place.

He could however not confirm whether there was an epidemic of either measles or scabies and said his chief medical officer was the only one who could say this and give figures of people affected by the diseases, including the number of deaths.

Kitwe Hospital senior medical superintendent Dr Gorohandhai Amin said he did not think there was an epidemic of measles or scabies in the district but admitted that there had been many cases.

Acting provincial medical officer Dr Hershed Patel said in Ndola that his office had not received any reports which suggested an outbreak of the diseases.

Dr Patel attributed the scabies attacks in Luanshya and other Copperbelt towns to lack of hygienic conditions.

He said the situation had been aggravated by mothers who allowed their children to play with those already infected.

However, a team of medical officers had been dispatched to the areas where scabies had been reported and found that there had been no new cases during the past few days, he said.

Dr Patel said he was confident that current measures taken by his men to fight the disease were adequate, and the situation was "under control."

#### CHOLERA, MALARIA, TYPHOID THREATENS

Lusaka ZAMBIA DAILY MAIL in English 8 Apr 78 p 3

[Text] A vigorous health education campaign has been launched in shanty townships and rural areas on the Copperbelt to fight a possible outbreak of cholera, provincial medical officer, Dr Harshad Patel, said in Ndola yesterday.

Speaking in an interview, Dr Patel explained that health officials in the province decided to launch the exercise because of the unusually heavy rains this year and the proximity of this country to affected neighbouring states.

"Some neighbouring countries around Zambia have already been attacked by cholera and there is a lot of stagnant and dirty water lying around the shanty townships and rural areas which could easily cause an outbreak of cholera," Dr Patel said.

Dr Patel added that instructions had already been issued to all hospitals, clinics and health centres in the province to submit weekly figures of diarrhoea cases reported.

"We believe that if the number of diarrhoea cases increase in a particular region, that could be a possible tip that the deadly disease is about to strike the area. But so far, we have never received any alarming figures, which is an indication that the situation is under control.

"I therefore appeal to all members of the public to rush to the nearest hospital, clinic or health centre whenever attacked by diarrhoea so that we can monitor the situation closely," Dr Patel said.

He also said that a number of medical personnel in the province had been deployed to various parts of the province to spearhead the health education campaign.

"The officers are going round in the shanty townships and rural areas teaching the masses the importance of keeping their surroundings clean. Villagers are also being warned of drinking water without boiling it first," he said.

People are also being discouraged from eating raw vegetables without cleaning them and using surrounding bushes around their settlements as toilets because flies are the worst cholera carriers, Dr Patel pointed out.

The other task facing the health officers deployed in the campaign is to make people in crowded townships and the rural population understand the importance of digging pit latrines instead of resorting to nearby bushes, he added.

Lusaka TIMES OF ZAMBIA in English 26 Apr 78 p 7

[Text] A critical shortage of water purification chemicals could cause an outbreak of cholera or typhoid, Local Government and Housing Minister of State, Mr Nephas Tembo, has warned.

He said the chemicals shortage was due to the failure of local authorities to pay overseas suppliers because of inadequate foreign exchange allocations.

Mr Tembo delivered the warning when he addressed Kapiri Mposhi township councillors and residents at the Kapiri Glass Products recreation hall.

"Without these chemicals, there is grave danger of an outbreak of diseases such as cholera and typhoid," he said.

He said the ministry was also concerned with the shortage of water in Kapiri Mposhi, which was on top of the list of problems the ministry was tackling urgently.

"I am pleased to learn that your council has already embarked on work to solve this problem by connecting with the Tazara housing estates and the New Kapiri Mposhi railway station using bigger water main piping, and the installation of two additional main water pipes," he said.

Mr Tembo said the measures would solve the water problem, but due to the envisaged rapid expansion of Kapiri Mposhi even under the present adverse economic conditions, the present water scheme would not meet the demand by 1980.

He said his ministry had recognised the need for an additional source of water supplies, and in light of the postponement of the second urban project under which investigations for a site on the Lukanda river for a possible dam were ordered, the ministry was now reviewing the scheme.

Lusaka DAILY MAIL in English 4 May 78 p 1

[Text] The Ministry of Health has warned Lusaka residents against drinking unboiled water because of imminent outbreak of cholera and malaria in the city.

In a circular issued in Lusaka early this week, sister-in-charge of clinics has directed that all pregnant mothers and children should start receiving anti-malaria pills weekly, while other residents should drink boiled water.

And director of medical services, Dr Joseph Kasonde, said that although there has not been an outbreak of the two diseases, it would be better for the residents to drink boiled water and take some anti-malaria tablets.

He said that because of cholera outbreak in a neighbouring country where over 300 people have so far died, the ministry was not taking any chances at all.

He added that because of the recent heavy rains malaria was imminent, adding that since it was an annual disease, with more cases during the rainy season it has been necessary that people in the country as a whole should start taking anti-malaria tablets.

## II. ANIMAL DISEASES

### BOTSWANA

#### LUMPY DISEASE SCARE

Gaborone DAILY NEWS in English 18 Apr 78 p 2

[Text] Lumpy disease is causing grave concern to farmers in the kgatleng district.

The disease was first reported in the eastern cattle-posts but latest reports say the entire district is almost covered.

According to veterinary officials in Mochudi a large number of farmers from all over the district are calling at their offices daily, seeking assistance.

A spokesman said however, there was no immediate assistance that could be given to farmers due to shortage of staff.

He pointed out that all assistants, including the head of the department, were out on a vaccination campaign against continuous abortion.

The spokesman however advised that farmers should buy lumpy skin vaccine from the local Advisory Centre.

Unofficial reports from some parts of the district say an unspecified number of livestock, specially cattle, have now perished as a result of the disease.

The district's eastern cattle-posts are also reported to be badly affected by red ticks.

## REPORTS ON FOOT-AND-MOUTH DISEASE

Gaborone DAILY NEWS in English 25 Apr 78 p 1

[Article by Tarcisius Modongo]

[Text] Veterinary officers in areas of the Central District have been accused of spreading foot and mouth disease instead of trying to control it.

The accusations were put before the Minister of Health Mr Lenyeletse Seretse by Mosu and Mmatshumo villagers.

The villagers complained that the officers were always carrying meat with them wherever they went and yet ordinary farmers were fined and flogged if they were carrying meat from one place to another.

Speaker after speaker complained to the Minister about the behaviour of the livestock officers. They also alleged that the officers killed their animals and conducted false post mortems on them. They described as "stealing by false pretences" the action by the veterinary officials because they kill and eat the animals alone.

The accusations labelled against the officials of the Ministry of Agriculture came in a kgotla meeting after the Minister had announced that the fight against foot and mouth disease in the area would cost Government about P1 million, and that his Ministry had agreed to give residents in the affected areas free medical treatment until the outbreak had been wiped out completely.

He also announced during the meeting, that plans were underway for Botswana to have its own foot and mouth vaccine factory.

Gaborone DAILY NEWS in English 26 Apr 78 pp 1, 4

[Article by Botswelole Tlale]

[Excerpt] Addressing kgotla meetings in his Mmadinare Constituency, the Minister of Education K. P. Morake said last week that Botswana is currently faced with national security and foot and mouth problems. He said that the two problems, among others, have caused a great deal of interference with the national development programmes.

He explained that the warring situation along our border with Southern Rhodesia has compelled Botswana to divert some of its development resources towards the formation of the Botswana Defence Force to protect our people from perpetual Rhodesian aggression.



He said that while the Government was still reorganising itself to tighten security, it was met with yet another obstacle--the outbreak of foot and mouth disease in northern Botswana.

He explained that the Government has already utilised P4 million to combat the outbreak. Mr Morake added that the outbreak has brought with it several other related difficulties such as the closure of the Botswana Meat Commission at Lobatse, because our beef could not be accepted anywhere.

Such a move, said Mr Morake, has led the Government to delay by one term payment of primary school fees. He said that the secondary school fees had to be waived in affected areas until such time that the abattoir resumes export of beef.

Mr Morake, however, warned that if until next term, there appeared no sign of the outbreak being wiped out the Government will have to give a second thought to the effected measures.

Mr Morake reminded his audiences that the disease control barrier has been effected along the railway line from Dibete to Vakaranga, dividing the area into east and west. He said that the Government has entered negotiations with the Botswana beef importing nations to allow us to export to them beef from the eastern side of Botswana.

Johannesburg POST in English 26 Apr 78 p 5

[Text] Botswana is making an international effort to try and curb foot and mouth disease in the north.

The Minister of Agriculture, Mr E. S. Masisi, has just returned from talks in France about the establishment of a vaccine production unit in Botswana. Mr Jack Falconer, the Director of Veterinary Services, is in Italy for consultations with the UN food and agriculture organisation.

Beef is Botswana's second largest foreign exchange earner, just behind minerals. Last year it brought the government coffers about R32-million.

#### Epidemic

The entire northern half of the country has been gripped by a foot and mouth epidemic for the past six months. Some sources speculate it could be linked to the spraying of the Okavango swamps, which has reduced the tsetse fly population and brought cattle into contact with buffalo, which are endemic carriers of the disease.

Beef cannot be sold from a foot-and-mouth area until one year after the last confirmed case has been identified.

New cases are being found all the time, however.

Observers here noted that the Government appears more concerned about foot and mouth at the moment than about the Rhodesian crisis.

Gaborone DAILY NEWS in English 27 Apr 78 p 2

[Article by Bapasi Mphusu]

[Text] The outbreak of the foot and mouth disease in some parts of the country is going to be a big blow to some of the agricultural shows this year.

In addition to this outbreak, there is the question of late, but heavy rainfalls which have swept and destroyed crops in some areas. These problems therefore ensure that some of the agricultural shows will not be as good as those of last year. Some people have already expressed their pessimism about the success of some of these shows, especially those in the extreme north of the country like Kasane, Maun and Tutume.

An official in the Department of Information of the Ministry of Agriculture, told the DAILY NEWS that their theme for these year's shows is "Livestock Management." More emphasis will be put on animal health, he said. He also felt that the foot and mouth disease will pose a problem to some areas.

For example, it has been confirmed that agricultural shows at Maun, Kasane/Chobe and Tutume cattle exhibitions will be prohibited.

On the other hand there are no problems as regards cattle exhibitions in the south. Senior officials of the Department of Animal Health of the Ministry of Agriculture are however, to meet to decide whether cattle exhibitions could be allowed in Serowe, Mahalapye and Ghanzi.

According to the present set-up of the control of the disease, cattle from the east of the railway line, stretching from Plumtree to Dibete, are not supposed to cross to the west.

As far as crops are concerned, the Information officer said the problem was that rains came late and crops are not yet ripe.

This year's rain devastated some of the fields in the north. In areas such as Maun, Kasane and Bokalanga area, some parts of the Central District and the North East District, roads communication were completely blocked and ploughing stopped for a time, due to flooded fields.

Despite these difficulties, likely to face our agricultural shows, show committees are optimistic about the success of their shows. Arrangements

to boost these shows have already started and the allocation of money has been carried out in some districts.

In the Central District, each of the four shows will receive P750 from the council. This was disclosed by Mr Philip Modisenyane of the CDC at a seminar for the CDC committees held at the Mahalapye Rural Training Centre early this month.

He assured the delegates at the seminar that the Council could help the show committees with transport and water reticulation to the show grounds if arrangements are made in advance.

The four shows in the Central District will be in Tutume, Serowe, Mahalapye and Bobonong. The Kgatleng District show will be allocated P270 by the council. The Southern District will allocate P700 to Kanye and P500 to Good Hope.

The series of these shows starts at Good Hope on May 12 to 13; Kanye May 19-20, Molepolole May 26-27, Mochudi June 2-3, Mahalapye June 9-10, Bobonong June 23-24 and Tutume June 30-July 1. Other dates are Maun July 7-8, Kasane July 14-15, Ghanzi July 21-22 and Gaborone July 27 to 29.

According to the Information official of the Ministry of Agriculture, Ghanzi and Kasane shows will be sort of trials. He said they will send observers to those shows.

This will be the first time these two areas hold agricultural shows.

The highlights of our agricultural shows are usually traditional dancing and horse racing in some areas. The attendance at shows is mostly of school children.

Taking into consideration the possible poor condition of crops and foot and mouth disease in some areas Agricultural Show Committees will try to find attractive alternatives.

Gaborone DAILY NEWS in English 28 Apr 78 pp 1, 3

[Article by Johannes Pilane]

[Text] A decision may be reached soon to allow Botswana to resume exportation of beef to the United Kingdom. At present only South Africa buys limited amount of Botswana beef and therefore the prices for cattle at the Botswana Meat Commission were forced down because of the limited sales. The U.K. sales decision would come about following the visit there by the Minister of Agriculture, Mr E. S. Masisi.

Mr Masisi, who returned on Monday, met a senior British official in Agriculture and held discussions with him.

The Minister was accompanied by Botswana's Ambassador to Brussels Mrs E. B. Mathe, Botswana's High Commissioner in London, Mr A. W. Kgarebe, the General Manager of the Botswana Meat Commission Mr O. K. Nielsen, and other Government officials.

Mr Masisi said his visit to the U.K. was a follow-up of the missions which were led by Botswana's Director of Veterinary Services Mr Jack Falconer in November last year and February this year. Mr Falconer who met with his Counter-parts in the United Kingdom requested U.K. permission for us to export beef there from the cattle currently permitted to be slaughtered in the BMC.

The permission to do so was suspended soon after the foot and mouth disease outbreak was confirmed.

So far, the Veterinary Officials of the United Kingdom have already agreed and accepted the importation of Botswana's beef but according to the existing EEC Veterinary Regulations on the importations of beef from non-member states, the decision was to be decided by the EEC Veterinary Standing Committee which was expected to meet yesterday, April 27.

During the discussions, it became clear that the United Kingdom at this stage has to continue to seek the support of the member-states to permit Botswana to export beef from the areas free of the foot and mouth disease, that is South and North East (East of the Railway line) he said.

Mr Masisi said he was given assurance by the U.K. authorities that they will do their best to put Botswana's case to the EEC. "I can only hope that the EEC Standing Committee will finalise this issue in their meeting which is due today, April 27," he said.

The Minister said that prior to this meeting, he had visited Lyon in France, to consult with the French Firm of Merieux which produces variety of vaccines including one for foot and mouth disease "where I met a strong Botswana delegation discussing with officials of that institute, the possibility of establishing a factory for the Foot and Mouth Disease in Botswana," he said.

He added: "The Botswana delegation which I met here told me that their discussions were progressing satisfactorily."

Part of this delegation was expected to arrive home yesterday. This part consists of the Permanent Secretary in the Ministry of Finance and Development Planning Mr B. Gaolathe and Botswana's Attorney General Mr Moleleki Mokama.

The Permanent Secretary in the Ministry of Agriculture, who was also a member of the delegation had to come home through Rome to brief and seek advice from Dr Boldrini, a Foot and Mouth Disease Expert of the Food and Agricultural Organisation (FAO).

The Minister instructed the Permanent Secretary to approach FAO Headquarters and give them up-to-date information about the foot and mouth disease situation in Botswana and request them to give additional assistance so as to enable Botswana to meet both its immediate and future disease control measures. "And of course we have sent an up-to-date information about foot and mouth disease to Brussels yesterday (Wednesday)," Mr Masisi said.

Gaborone DAILY NEWS in English 9 May 78 p 1

[Text] The Government's P50-per-beast foot and mouth Relief Scheme starts to operate today at Shakawe in the North West District. This was disclosed last week by the Ministry of Agriculture.

The Minister of Agriculture E. S. Masisi addressed kgotla meetings at Maun and Shakawe last week explaining how the scheme is going to operate. Veterinary regulations prohibit the movement of cattle from foot and mouth outbreak areas, and farmers in those areas are not able to send their cattle to the Botswana Meat Commission (BMC) for slaughter and sale.

To relieve the farmers in those areas, the Minister said the Government has decided to provide interest free loans.

Government will lend farmers money through the Botswana Livestock Development Corporation (BLDC) and the Botswana Co-operative Bank. The farmer will only be given loan provided he agrees to repay it from selling cattle from his area when the foot and mouth disease has been eradicated.

Mr Masisi explained that oxen only will be accepted as security for the loan. And each farmer is allowed 10 beasts in the scheme.

Female beasts and small stock (sheep and goats) will not be accepted.

He, however, told his audience that the case of accepting small stock will be looked into.

Mr Masisi further explained that the farmer will have to provide full testimony that the cattle belong to him before he is given the loan. He asked Chiefs, councillors and other authorities in the respective area to co-operate in providing evidence for the farmers during the process. If farmer has a brand, he will have to produce its certificate.

Prior to addressing kgotla meetings in both Maun and Shakawe, Minister Masisi addressed a meeting of chiefs, headmen and councillors in Maun, calling for co-operation during the operation of the scheme.

In all the meetings Mr Masisi was accompanied by Under Secretary in the Ministry of Local Government and Lands B. K. Temane, Registrar of Co-operatives, J. Oteng and BLDC and Agriculture staff. Chief Letsholathebe Moremi of the Batawana and the Acting District Commissioner in Maun, Mr Leratang Gofetile were also present including some local Parliamentarians.

In general the residents of Ngamiland accepted the scheme. They, however, questioned the involvement of the BLDC into it. Farmers there said BLDC offers low prices for cattle and they will be reluctant to give it their cattle as security against for the loans.

Gaborone DAILY NEWS in English 10 May 78 p 1

[Text] The Director of Veterinary Services has announced that the movement of slaughter cattle from North East Botswana (the area east of the railway line cordon) will commence on May 14.

In a press release producers are advised to apply to Botswana Meat Commission (BMC) for quotas to slaughter cattle as soon as possible.

The BMC is at present receiving slaughter cattle from South. Cattle movement in the north of Botswana was restricted after the outbreak of the foot and mouth disease was confirmed in November last year.

The lifting of this restriction was also announced by the President Sir Seretse Khama in Serowe over the weekend during the national conference of the Botswana Democratic Party (BDP).

The announcement was welcomed by the audience at the conference.

Meanwhile the P50 Foot and Mouth Relief Scheme started to operate this Monday at Shakawe in the North West District.

## BRAZIL

### FOOT-AND-MOUTH VACCINATION

Brasilia Domestic Service in Portuguese 2200 GMT 26 May 78 PY

[Text] Pursuant to an agreement signed with the Agriculture Secretariat, (CUSESCOFA) will conduct a cattle vaccination campaign against foot-and-mouth disease in Rio de Janeiro state during the month of June.

Trivalent vaccines, which give protection against the three typical viruses of the disease, will be used.

This vaccination, which is compulsory and is conducted every 4 months, is designed to develop immunity against the disease. [words indistinct] the vaccinated animal can thus be sold, slaughtered and consumed.

#### EAST GERMANY

##### NEW VACCINE FOR HOG SALMONELLOSIS DESCRIBED

East Berlin NEUE DEUTSCHE BAUERNZEITUNG in German Vol 19, No 15, 14 Apr 78  
p 6

[Article by Dr Wolfram Schoell, Dessau Institute for Vaccines]

[Text] Hog salmonellosis is a bacterial infectious disease. Of the genus Salmonella, embracing 1,700 species, one species (Salmonella cholerae-suis) has in the course of development adapted itself specifically to the hog and has become the causal organism of a general infection with special effect on the gastrointestinal tract. The clinical disease is induced predominantly in pigs, and has its highest incidence where there are deficiencies in hygiene, care and feeding.

Under favorable conditions the germs can maintain themselves and increase in the herd without observable effects. This greatly increases the difficulty of combating the disease, because some animals can remain constant germ-carriers and not be reliably identifiable by current diagnostic methods. They cause additional infections in the herd. If these are breeding stock and are sold, herds free of salmonellosis can be infected through them.

In the presence of predisposing environmental factors and/or high concentration of the causal organism in the herd, outbreaks of the disease may occur. In that case the losses in the age groups affected are often very great. In infected herds we have seen losses of shoats and newly weaned pigs of 10 percent, under poorer conditions 20 percent, and in the extreme case losses of over 40 percent. It is especially difficult when salmonellosis and dysentery show up simultaneously. The real damage is then several times that directly caused by losses of animals. The animals that survive the disease are considerably retarded in development and require additional hygienic and veterinary measures. Furthermore, in infected herds the production chain is lastingly disordered. There is also a risk of human infections, although this is not very high because of the special adaptation of the causal organism to the hog. It is further reduced by food hygiene control measures.

## Breaking the Chain of Infection

Because of the high resistance of the Salmonella, any effort to combat the disease must be based primarily on production organization and hygiene measures. It is indispensable to take this into account in working out cooperative arrangements.

What is chiefly involved? The in-and-out principle, for example, is very important, with a thorough cleaning and disinfecting phase. But that does not always suffice in itself. The chain of infection must be weakened and if possible broken in the hog itself. But even when the animals have a good constitution and are in good condition, that can be accomplished only by the methods of immune biology. By means of the "'Dessau' hog salmonella serum" it is possible to block immediately a new outbreak or the manifestation of clinical cases in an infected herd. The breeding stock and the young animals must then be actively protected by vaccine. For this purpose the inactive vaccine "'Dessau' Salmoporc" [trademark registered] has been available thus far. Both of the immunizing preparations mentioned have been extensively tested and put into practical use in collaboration between our research institutions, veterinary medicine, and socialist agriculture. Even in past years they have greatly helped in reducing losses of animals due to hog salmonellosis.

## Listed in the Pharmacopoeia

To be sure, this method was still too expensive. It was therefore of interest to develop a vaccine that could be better fitted into the production cycle, was better tolerated and produced a higher immunity, and could be combined with other important vaccines. We assembled these requirements into a catalog of requirements which was worked through systematically. A variety of forms of socialist cooperation with partners inside and outside of our institute, and most especially with the Institute of Medical Microbiology and Epidemiology of the Karl Marx University at Leipzig, helped us in the solution of this problem.

We addressed experts in human and veterinary medicine on behalf of the live hog salmonellosis vaccine "Suisaloral 'Dessau.'" It was adopted into the pharmacopoeia. This is the first live vaccine not restricted in growth but provided with two mutually independent genetic attenuation markers. (These are selective alterations of the genetic material which result in harmlessness of the vaccine.) Another new feature is that it can be administered orally and is also suitable for intramuscular inoculation. The number of vaccinations necessary is reduced, and at the same time it can be combined with more than one live vaccine against pig dysentery (vaccination of the brood sow), erysipelas, hog cholera, and Aujeszky's disease. This raises the productivity of the veterinary and agricultural professional staff.



The good tolerability and quick protective effect of the new live vaccine permit not only its prophylactic use in the infected herd, but also the immunization of clinically healthy animals within acutely affected groups. The stable immunity obtained by systematic use of the vaccine lasts up to the time when the hogs are ready for slaughter.

In the clinical testing of the vaccine, losses of young animals were reduced by 30 to 45 percent and the costs of treatment per pig weaned were reduced to about half. Besides the quick and complete elimination of all clinical forms of hog salmonellosis, a gradual elimination of the latent forms was also achieved, i.e., a decontamination effect. It is true that the vaccine alone should not be depended on to maintain this; all the combative measures mentioned should be employed.

## ETHIOPIA

### CATTLE VACCINATION CAMPAIGN

Addis Ababa THE ETHIOPIAN HERALD in English 30 Mar 78 p 4

[Text] Debre Markos (ENA)--A total of 456,100 head of cattle have been vaccinated against different diseases by the Gojjam regional office of the Ministry of Agriculture and Settlement, Dr. Hailu Gebru, the regional veterinarian has disclosed.

From August 8, 1977 to January 8, 1978, a total of 67,825 head of cattle in Debre Markos province, 40,209 in Kola Damot province, 58,343 in Agew Midir province, 119,889 in Bahir Dar province, 97,128 in Metekel province, 26,196 in Mota province and 46,513 in Bichena province were vaccinated against Rinderpest and other diseases.

Dr. Hailu has advised farmers who hide their cattle to bring them for vaccinations without being confused by the false propaganda of reactionary elements who persuade them not to take their cattle to the vaccination area by telling them that the veterinarians come to count their cattle and take blood from the animals.

## LAOS

### VETERINARY SERVICE ACTIVITIES

Vientiane BULLETIN QUOTIDIEN in French 24 Feb 78 p 7

[Text] Vientiane (KPL)--With a view to promoting an increase in stock farming, on the 20th of the month the veterinary service of the Vientiane

province and township launched a prophylactic campaign for animals in the [Taseng] Vat Sop, Sisattanak, [Taseng] Phia Vat and [Taseng] That Khao communes, the Sisattanak administrative district, Vientiane township. During the campaign, the number vaccinated exceeded 320 buffaloes and 120 oxen.

Vientiane BULLETIN QUOTIDIEN in French 27 Feb 78 p 7

[Text] Vientiane (KPL)--In pursuance of party and government policy with regard to the inoculation of animals and the promotion of stockfarming among the rural population, the provincial veterinary services of Luang Prabang and Saravane, throughout the inoculation campaign, which began early in the year, have vaccinated 500 buffaloes, more than 1,500 hogs and several thousand domestic fowl.

#### MADAGASCAR

##### RABIES AREAS

Antananarivo JOURNAL OFFICIEL DE LA REPUBLIQUE DEMOCRATIQUE DE MADAGASCAR in French 22 Apr 78 p 605

[Text] The following entire areas have been declared "contaminated" by rabies: the Fivondronanas of Arivonimamo, Antananarivo Avaradrano, Antananarivo Atsimondrano and Tsiroanomandidy, Faritany of Antananarivo and the Fivondronampokontanys of Miarinarivo, Soavinandriana, Arivonimamo, Manjakandriana, Ambohidratrimo, and of Antananarivo I, Faritany of Antananarivo.

#### MAURITANIA

##### RINDERPEST OUTBREAK

Nouakchott CHAAB in French 14 Apr 78 p 8

[Excerpt] The minister for rural development has issued a communication relating to the results of the drought. Because of this drought and the consequent diminution of grazing ground which caused very heavy concentration of cattle, the rinderpest, which has not appeared in recent years except in some few centers, has broken out in full force.

## NIGERIA

### CATTLE TAX WILL DISCOURAGE VACCINATION

Kaduna NEW NIGERIAN in English 4 May 78 p 4

[Letter from A. A. Voh, Abu, Zaria]

[Text] Kindly allow me space to express my views about the reintroduction of Jangali (cattle tax) in Gongola State.

Undoubtedly, the livestock industry of this country resides in the hands of the Fulanis. I, therefore, see it as an irony of the situation that at a time when all efforts are being made towards settling this group of people that Gongola State should reintroduce the Fulani-scaring Jangali.

From recent year's vaccination figures it can be rightly said that the Fulanis are beginning to appreciate the importance of vaccination programmes. This was evidenced by thousands of head of cattle that were vaccinated on the launching ceremony for last year's JP 28 (Joint Project massive vaccination campaign for the control of Contagious Bovine Pleuropneumonia--CBPP) otherwise known as cattle plague (Ciwon huhu, in Hausa). This has been the most dramatic change following the abolition of cattle tax in the state.

In the light of this fact, I beg to disagree with the reintroduction of this cattle tax regardless of whatever sum is levied per head of cattle for the following reasons:

First, with the reintroduction of this tax, the Fulanis will struggle tooth and nail to evade the taxation and consequently low numbers of animals will be presented for the annual vaccination. The vaccination programme in this country is a big and economic step towards improving and increasing our livestock industry.

If these animals are not vaccinated and indeed they will not be vaccinated because of Jangali evasion, they will be wiped out by very fatal animal infectious diseases like blackquarter (harbin daji)--a mortality rate of 100 per cent, malignant edema--mortality rate around 100 per cent, anthrax or splenic fever, CBPP (ciwon huhu--Hausa), TB and Foot-and-Mouth disease (FMD) just to mention a few.

Since these diseases are so fatal and with so high a mortality rate an entire herd can be completely wiped out during an outbreak without prior prophylaxis. If the animals are wiped out, no cattle and no Jangali--we must not eat the eggs if we want chicks!

Secondly, still in the bid to evade taxation, the Fulanis will, together with their cattle, evacuate Gongola State into neighbouring Jangali-free states and the state will become "a state once known for its cattle." Once again, no cattle, no Jangali.

Thirdly, it will be more difficult if not impossible to settle the Fulanis and therefore, livestock and education improvement programmes will be in jeopardy. We cannot afford that!

Also this country will not boast of an accurate cattle population because there will be no effective animal census.

While I appreciate the efforts the state government is undertaking to explore all possible sources of revenue as demanded by the "tight budget," I must submit in humble terms that the policy makers do not become short-sighted to the repercussions of this decision which in my opinion will be more disturbing than the problem that triggered it off.

Conclusively, I am appealing to the Military Governor, Col. M. D. Jega and his able policy makers to please explore other avenues of revenue but please do not reintroduce Jangali in Gongola State. Let the sleeping cat lie!

#### SOUTH-WEST AFRICA

##### MYSTERIOUS HORSE DISEASE

Windhoek THE WINDHOEK ADVERTISER in English 10 Apr 78 p 1

[Text] Keetmanshoop--A mystery disease has cost horse breeder Mr Maartin Wittmann here 28 fillies and two valuable American colts. Mr Wittmann, estimating the loss at more than R6,000, said the animals died within 24 hours of showing the first symptoms of the undiagnosed disease. A mystery bug, also unidentified, put race horses out of action in Transvaal last week.--SAPA

##### ANTHRAX STRIKES ETOSHA

Windhoek THE WINDHOEK ADVERTISER in English 28 Apr 78 p 6

[Text] Windhoek--More than 100 animals died in the past few weeks following an outbreak of anthrax in the Etosha Pan Game Reserve in Northern SWA/Namibia, the Nature Conservation Department said here this week.

The Department said 80 per cent of the animals which died were zebra, Wildebeest, springbok and gemsbok were also affected by the deadly disease.

The outbreak could be attributed to the abundant rains of the past few months, it said.

Anthrax, highly infectious, was endemic in the Etosha and usually occurred after the rainy season.

"When drinking animals give preference to rain water and towards the end of March when the pan has dried up, they congregate round waterholes which, when contaminated, are the main source of infection.

"And, after contracting the disease, it is a question of days until the animal dies," the Department said in a statement.

The disease, which would lie dormant in soil or bones for more than 60 years, mainly affected herbivores, while carnivores, such as lions and vultures, were carriers of the disease.

The Department said tourists would not contract the disease if they refrained from leaving their vehicles and touching infected carcasses.

#### ZAMBIA

##### HEMORRHAGIC SEPTICEMIA VACCINE TO BE PRODUCED LOCALLY

Lusaka ZAMBIA DAILY MAIL in English 27 Apr 78 p 3

[Text] Zambia will soon start producing its own vaccine of haemorrhagic septicemia for animals in order to cut down on foreign exchange and reduce the number of cattle which are being killed by the disease.

Disclosing this in Lusaka on Tuesday deputy director of the Veterinary and Tsetse Control Department, Dr Mainza Shandomo, said that the team leader of the Food and Agriculture Organisation (FAO) disease project, Dr Schels was already in the country to prepare ground for the production of the vaccine.

Dr Shandomo said that the department will start producing the vaccine at its new research station in Chilanga as soon as the ground has been prepared and the transformer has been installed at the station.

The deputy director pointed out that production of the haemorrhagic septicemia vaccine will go a long way in helping curb the disease which, together with the corridor disease, has claimed the lives of 8,540 cattle in Southern Province.

"We also hope that the country will save a lot of foreign exchange if the vaccine is produced locally," he said, adding that at the moment FAO

and some private companies in Zambia were providing the vaccine to the department.

Dr Shandomo also said that local production of the vaccine will certainly help reduce the deaths of cattle because it will mean that animals will be vaccinated once every year.

Meanwhile, Dr Shandomo said that his department has lifted the ban it imposed on the movement of animals in the Southern Province following the outbreak of corridor disease.

He said that since the disease has now been eradicated his department has lifted the restrictions on the movement of animals. But, he pointed out that his department will continue vaccinating, spraying and dipping the animals.

And according to the department's records, 8,540 cattle died due to corridor and haemorrhagic septicemia diseases in Namwala, Monze and Mazabuka districts.

### III. PLANT DISEASES AND INSECT PESTS

#### INTER-AFRICAN AFFAIRS

##### EAST AFRICA LOCUST CONTROL

Dar es Salaam Radio in English to East Africa 1000 GMT 30 Apr 78 LD/EA

[Text] Arusha--The Ministerial Council of Locust Control has endorsed the budget of 60 million shillings to be used in the control of locusts in Eastern Africa. The ministerial council, which ended its meeting in Arusha today, has pledged to increase its efforts in controlling desert locusts at their breeding grounds. The chairman of the meeting, Ndugu John Malecela, told newsmen that this year's heavy rain have intensified breeding grounds for locusts. He said desert locusts have been reported and confirmed in the Red Sea coastal areas of Arabia, Sudan and Ethiopia and some parts of Somalia, but they were under control. Ndugu Malecela, who is the Tanzanian agriculture minister, said due to the threat of desert locusts (?infestation), the council has recommended the establishment of a subbase in Djibouti to be used for control operations.

#### ALGERIA

##### EFFORTS TO CONTROL WHITE DISEASE (FUSARIUM ALBEDINIS) IN EL GOLEA PALMERIES

Algiers EL MOUDJAHID in French 27 Mar 78 p 5

[Text] Algiers, APS--A project designed to halt the progress of a focus of white disease (bayoud) in palm trees, which no treatment has thus far been able to check, was set in motion last week at El Golea in the wilaya of Laghouat.

The action taken in this palmery is of an empirical nature. It aims at localizing, isolating and attempting to circumscribe the disease in order

to prevent its spread throughout the region, and possibly to treat palm trees infected by the microbe.

This project, undertaken by a team from the National Institute for the Protection of Plant Life, consists in its initial stages of digging up all the diseased trees, as well as those located within a radius of 10 meters from those infected (providing security perimeters) and burning them.

After digging up all the diseased trees and all vegetation on the contaminated surfaces, this part of the El Golea palmery was irrigated and treated with chloropicrin, a product used in trench warfare as a poison gas, 1914-1918. This product, which has a tendency to move downward and diffuse into the soil, was injected at a depth of about 25 centimeters in order to kill all animal and vegetable life and thus sterilize the treated areas.

The four orchards treated at El Golea represent a surface area of about 3,400 square meters. These orchards have been enclosed with barbed wire to make them completely inaccessible. All inhabitants located in their immediate vicinity have been relocated to avoid the toxic effects of the product employed.

An official of the National Institute for the Protection of Plant Life has indicated that the areas treated with chloropicrin will remain unsuitable for any agricultural activity for the next 5 years. During this time, soil samples will be taken regularly in order to determine whether the microbe has been destroyed.

"If the effects of the gas turn out to be positive, these surface areas will be reseeded with healthy soil so as to restore natural microbiological life. They will then receive a new planting which will not necessarily consist of palm trees, but rather fruit trees and truck crops."

If treatment is not concluded after the specified period, the various departments of the Ministry of Agriculture will then study the advisability of replanting sensitive palm trees in certain areas that have been treated in a manner similar to that at El Golea, so as to study their behavior.

Some observations made by those who have studied white disease have indicated that it particularly attacks the nobler, more sensitive varieties, such as the "Deglet Nour."

What needs to be emphasized here is the delay, on the part of all parties concerned with the problem, in initiating this project to protect the El Golea palmery.



It has been estimated that white disease was discovered about 3 years ago at El Golea. It seems that the disease was transmitted to part of the palmery by some onion plants brought back from the Ghardaia region, which for several years had already been known as a "white disease" zone.

Twelve months have passed since locating the focus of this disease. These months have been characterized by the unresponsiveness of certain officials to the not especially insurmountable problems posed by the relocation of about 60 persons residing in the immediate vicinity of the parcels of land to be treated and the raising of funds necessary to purchase equipment and chemicals for treatment.

The serious problems posed by the spread of white disease through Algerian palmeries has been somewhat ignored at various levels of the Ministry of Agriculture, ever since a seminar was held on this subject in October 1972.

The phenomena related to the advance of this disease--in space and in time--ought to encourage a serious study aimed at establishing a vast network of surveillance and observation and encouraging any research that might provide an effective show of strength against this epidemic.

The danger facing Algerian palmeries is apt to have catastrophic effects on Saharan regions in general, if it is not nipped in the bud.

In the Algerian Sahara, one of the most extensive and forbidding deserts in the world, with a surface area of more than 2 million square kilometers, live 1.5 million people, more than 70 percent of whom derive their living from the products of the palm tree.

In many southern areas, the date is still an indispensable item in the diet of the people. This is true in the Saoura, the Touat, the Gourara and the Tidikelt. Each year, some of these southeastern areas of the country export about 25,000 tons of dates to northern Algeria and abroad.

The date-palm disease which seems to have appeared at the beginning of the last century in the Dra Valley of Morocco, utterly destroyed the Moroccan palmeries. It is estimated that 5 to 6 million trees were wiped out by white disease.

After being a traditional exporter of dates (the Meljoul variety, now completely extinct), especially to Great Britain, Morocco has now become an importer.

It was from Morocco that the white disease entered Algeria, at Beni-Dunif, which is very close to the Moroccan town of Figuig. The disease spread through the Saoura Valley, jumping about 700 kilometers to the Fogaret-Ez-Zoua to the north of Ain-Salah.

In 1945 the microbe made its appearance at Ain-Salah, and at the beginning of the 1950's at Metlili, this probably being accounted for by the heavy traffic between the inhabitants of this locality and those of Ain-Salah. By 1964-1965 the disease had been documented at Ghardaia.

Some documents found with the Ministry of Agriculture and the Agrarian Revolution have permitted us to track the progress of the disease at Ain-Salah. These documents, which are the fruit of long, laborious observations made by a captain in the colonial army, have revealed that the primary focus of the disease was confined for 5 years to just one orchard before it branched out into three or four secondary foci, finally spreading to the palmery as a whole.

Stating that a palmery is infested with the white disease does not indicate that it has been entirely destroyed. At Ain-Salah, for example, 60 percent of the production of the palmery is of the Tegazza variety, which is traditionally exported to Mali, 5 percent consisting of the Tegoul, a worthless variety of kernels with low-quality fruit, and 35 percent of other varieties for local consumption. In 1972, only 15 percent of the Tegazza survived. During this time, the Tegoul variety, which is more resistant, was more than 30 percent represented. This decrease in overall production of the exportable variety, which is more sensitive to the disease, very seriously curtailed the revenues of the growers.

Although until now the epidemic has only affected some palmeries, most of which grow common varieties of vital importance to the producers but not of great economic importance at the national level, there is no less of a threat to the palmeries of the Wadi Rhir, the Souf and the Zibans, producers of the Deglet Nour variety, which is regarded as especially sensitive to white disease.

The threat posed to these palmeries has been a matter of record since 1963, which was when an active focus of the disease was discovered at Ghardaia. This focus, which has not stopped growing, constitutes a serious risk for all the still-healthy palmeries in the country. The example of what it has done at the El Golea palmery is rather significant in itself.

The French term "bayoud" used for "white disease," from the Arabic "al-bayyud," meaning "whitish" (because the diseased palm branches take on a leaden color), is often confused by Saharan growers with other palm tree diseases, especially those caused by coccineal insects.

White disease, or vascular fusariosis of the date palm, is caused by a microscopic fungus (*Fusarium exyporum*), which penetrates the roots of the palm tree, then grows into the vessels, completely obstructing them and thus causing them eventually to wither or die.

The disease can be propagated either by contact between roots or by irrigation. As a general rule, according to observations that have been made, man is the vehicle by which the disease spreads from one focus to another, either through the agency of plants as is thought to be the case at El Golea, or by means of "djerid" palm branches used to construct hedges and windbreaks.

There is another "Fusarium" known as "Panama disease" which attacks banana groves and the oil palm. Other forms of the fungus attack truck crops such as melons, tomatoes, eggplant, etc.

Studies have shown that white disease has no effect on certain resistant varieties of the palm tree, such as the Takerboucht, all bearing the same name but differing somewhat in size, color and weight of fruit.

In view of the threat posed to Algerian date palm growing, how does one organize the means of control and the research that will lead to eradication of this microbe?

When the disease strikes their palm trees, the growers, who are very poorly informed concerning the disease and its symptoms, sometimes try to counteract its effects by means at their disposal, which, however, are not always effective.

At Metlili of the Chambas, in the Mزاب region, a peasant came up with the idea of digging a trench completely around his diseased palm tree, filling these with quite a number of old tin cans and a quantity of salt to hasten their oxidation.

"By doing this I thought that the rust absorbed by the palm tree would help kill the disease that was eating it away. Of the palm's 80 branches, 60 withered away after the disease appeared. Eight months after treatment, my palm tree seemed to regain a certain amount of its strength. I can tell more definitely after the next harvest."

The example of this peasant who refused to give way to despair gives us some idea of the grimness of this battle whose outcome, still uncertain, depends on organizing against the white disease.

If the battle is to be won, there is still much to do. At present there is only one team of two young technicians, who are working only at surveillance of the foci to warn against any advance of the disease, providing a tracking service. "In order to perform this service, both of us have to visit regularly every palmery in the country," says one of them who was interviewed at Touggourt. "All that is available to us is a '2 CV.' and some sleeping bags. Generally speaking, we follow up information supplied by the growers. We try somehow or other to give out information on the disease and to increase people's awareness of it. But we must confess that we have neither the material means nor the personnel to perform our assignment properly."

The ideal action to take in such a situation would be to set up a vast surveillance network, using the latest techniques available, which would make it possible to give warning in time to act along the lines of the procedures adopted at El Golea.

Once the disease has struck and it is no longer possible to do anything, as is the case at Ghardaia, Metlili, Ain-Salah, Adrar, Aoulef, Timimoun, Beni-Abbes, Bechar and Beni Ounif, there is no remedy possible according to the present state of our knowledge. We are reminded of the Moroccan tragedy. At another level, that of research, what is needed is to organize against the disease and to deal, more generally, with the problems of Saharan agriculture.

Some studies of white disease are currently being conducted in Algeria by foreign scholars, as well as in France, Tunisia, Italy and the United States. Organizing Algerian research to deal with Saharan agricultural problems, which is very poorly understood by our scientists, depends primarily on concerted efforts and exchanges of information between the various departments of the Ministry of Agriculture, especially the National Institute for Agricultural Research, the National Institute for the Protection of Plant Life, and the National Saharan Agriculture Institute.

At Sidi-Mahdi, not far from the town of Touggourt, the Agricultural Research Institute and the Saharan Agriculture Institute have locations next door to each other. The INRA station covers an area of 30 hectares, of which 22.5 are reserved for cultivating the various species of palm trees. The purpose of this station is to apply certain mechanized procedures and irrigation and sprinkler systems.

This station is provided with 350,000 dinars to fund its research in Saharan agriculture, of which 220,000 is used to pay the salaries of workers. "The rest is used to purchase various items and for administrative costs. For the work of research properly so called, about 480 dinars is left." In the area of research, outside of the three agencies that are cooperating in the matter of white disease and the Saharan agricultural situation in general, Sidi-Mahdi has no full-fledged Algerian scientist or Algerian trainee except the station manager.

The framework exists for organizing such work. The problem of the moment is still that of encouraging people to enter the work, and to release the necessary funds. If the investment funds for this are considerable, then even more is at stake. One need only consider the important part played by agriculture in national life to be convinced of this.

One man who is highly concerned with this problem is the agriculture delegate of the daïra of El Golea, Mr Guesmia, an engineer in Saharan agriculture recently graduated from the Agricultural Technology Institute

of Mostaganem, who points out that, for Algeria, the development of Saharan agriculture constitutes the wave of the future. "Considered at the level of soil, climate and water resources, the regions of the south are quite capable of becoming vast orchards or granaries, in the context of a regionalization of agricultural production and self-sufficiency in the basic agricultural products; for those who live in these regions the choice in itself is rather easy to make."

## BRAZIL

### BRUZONI FUNGUS ATTACKS RICE CROP

Rio de Janeiro JORNAL DO BRASIL in Portuguese 8 Mar 78 p 16

[Text] Vale do Paraiba farmers, who have already begun harvesting rice, think there will be a decline of almost 100,000 sacks in the region's rice harvest as a result of an attack of bruzoni, a fungus that attacks the plant at every stage of its development. Vicente de Jesus Carvalho, chief of the Vale do Paraiba DIRA [Regional Agricultural Directorate], communicated the fact to the technical commission of the Secretariat of Agriculture, and asked that a plant pathologist and an economist from the State Institute of Agricultural Economics be sent to determine the cause of the disease and to estimate the damage.

According to the growers, the variety most severely attacked by the disease is IR-841, which the Agricultural Secretariat has guaranteed to be the most resistant to the bruzoni fungus. The IAC-120 and IAC-438, varieties that are more susceptible to fungus, are resisting it, which leads the growers to deduce that at least part of the seed supplied by the station was contaminated.

The disease attacks anywhere on the stalk or at its base, causing the spine of the plant to dry up. It is decimating the rice paddies in Vale do Paraiba, especially those of Taubate, where the infection is severe. There is considerable loss in income, since the stalks produce light weight grains and low yield when processed.

## ETHIOPIA

### LOCUST PLAGUE POSSIBLE IN OGADEN

Kampala VOICE OF UGANDA in English 19 Apr 78 p 4

[Text] The Ethiopian-Somalia conflict in the Ogaden, combined with good breeding conditions, could threaten East Africa with a massive locust plague.

Heavy and widespread rain in the countries around the Gulf of Aden since last October has produced ideal locust breeding conditions and swarms are reported to have bred on the southern Red Sea coast of Saudi Arabia in the Jizan area, in the Yemen Arab Republic, and on Somalia's north coast.

There have been reports of concentrations of hoppers--young locusts--in Ethiopia, and Somalia and of swarms in Sudan, Ethiopia, and Somalia, while hopper bands have recently been reported on the Wembere grass plains of central Tanzania.

The risk of a locust plague is now a real fear throughout the region, with the Desert Locust Control Organisation for Eastern Africa (DLCOE) alerted to the threat [words indistinct] the locusts' breeding ground is expected to be in the Ogaden desert region as they spread south from their present position along the Somali north coast. By next November and December, the breeding generation will be on to the eastern edge of the Ogaden and into Somalia south and east of the Ogaden Desert. As the locusts move into the area to breed, they will find not only perfect breeding conditions, but also no effective resistance.

The locust control teams which would ordinarily be out controlling the hoppers would not be able to operate freely in the area. Unlike the Red Cross, they are not protected persons during any hostilities, and would almost certainly find it impossible to operate.

Both Somalia and Ethiopia are members of DLCOE, which in fact has its headquarters in Ethiopia, but past experience has shown that locust control goes by the board in times of war--during the fighting between Pakistan and India along their border, excellent breeding country for locusts, all control work had to stop.

By December, the locusts could be in the northern part of Kenya, and by the New Year in Tanzania--providing conditions remain favourable.

The last big locust threat to East Africa was in 1969, and the threat of a new plague remained for more than a year throughout West and East Africa, the Arabian peninsula, Morocco, Egypt, Pakistan and India.

Killing locusts is quite easy, but the logistical problem of getting the right amounts of spray to the right places at the right time is difficult. Locusts swarm in millions--the largest swarm so far measured was in Somalia in 1958, when one single swarm covered 1,000 square kilometres and was estimated to contain 40,000 million locusts. A migrating swarm of that size would eat about 80,000 tons of food a day.

## INDONESIA

### LOSSES TO 'WERENG' PESTS

Jakarta ANTARA in English 0742 GMT 15 May 78 BK

[Excerpt] Medan, May 14 (ANTARA)--Successive "wereng" pest attacks in the last 4 years have caused an estimated total loss of 236,161 tons of unhulled rice to North Sumatra, the equivalent of 141,697 tons of rice. This was reported by North Sumatra Administration Secretary Bardansyah recently to the Regional Assembly. He said the serious shortage of rice felt by the province in the last few years had been mostly due to these vicious wereng pest invasions. He specified that under Pelita II (the Second Five Year Plan) wereng plagues had caused losses to harvests amounting to 158,248 tons (of unhulled rice), in 1974, 3,473 tons in 1975, 65,255 tons in 1976 and 9,185 tons in 1977.

## LAOS

### CATERPILLARS DEVASTATE RICE FIELDS

Vientiane BULLETIN QUOTIDIEN in French 27 Feb 78 p 7

[Text] The agricultural services of the Vientiane province and township on 21 February, sent 900 kg of insecticides and 11 pumps to the Saysettha subdivision and the Hatsayfong district. Of this amount, 800 kg and 8 pumps are destined for the Saysettha subdivision to combat the caterpillars which have devastated their irrigated rice fields.

The planters in these two districts are at present zealously spraying the [fields] with insecticides.

## NEW ZEALAND

### LUCERNE-APHID WARNING

Christchurch THE PRESS in English 17 Apr 78 p 7

[Text] A warning to farmers that aphids are increasing again in lucerne stands has been given by Mr T. E. T. Trought, an entomologist of the research division of the Ministry of Agriculture.

Generally aphid populations had been low this season, he said, but numbers were building up again after recent rains that had stimulated the growth of lucerne. This might continue until winter sets in.

The newly-arrived pea aphid, he said, was more common than the blue-green aphid, but was about as harmful.

Mr Trought said that seedlings of recently-sown lucerne were particularly susceptible, and establishment and growth might be set back if aphid numbers increased unchecked.

Spraying might have to be considered.

On older stands, grazing could check infestations, but spraying might have to be considered on them, too.

In trial plots near Lincoln, aphid infestation had caused a drop of at least 40 per cent in production on unsprayed plots in the last three weeks, Mr Trought said.

#### NIGERIA

##### TSETSE FLIES THREATEN EASTERN AREA

Kaduna NEW NIGERIAN in English 24 Apr 78 p 17

[Article by Ibrahim N. Salihu]

[Excerpt] Fears are now mounting high over the threat posed to livestock by the invasion of tsetse flies in Gongola State.

This was revealed by the state's Commissioner for Agriculture and Natural Resources, Alhaji Abdullahi Abba, while briefing newsmen in his office in Yola.

He alleged that the flies migrated from the neighbouring Cameroun Republic. For that reason, he added, his ministry had received instructions from the Federal Military Government that the ministry's Tsetse Emergency Control Unit should be despatched to the Cameroun Republic so that they could assess the situation.

He explained that it would not work out well if "we eradicate ours and the Camerounians failed to do so."

As at now, he said, the federal tsetse fly control unit was on stand-by in Kaduna, in case of any emergency.



## PEOPLE'S REPUBLIC OF CHINA

### PINE CATERPILLAR CONTROL

Peking NCNA in English 0715 GMT 18 Apr 78 OW

[Text] Peking, 18 Apr--Pine caterpillars were eliminated last year from more than 800,000 hectares of forest in China by using a parasitic fungus called botrytis bassiana or by other biological means. This task was formerly undertaken by the manual spraying of insecticides--a method that was costly and which had side-effects. The major pest in the country's forests, pine caterpillars eat the needles over large tracts of pines as rapidly as if the tracts were razed by a smokeless fire. The most effective in the control of the pest has been the parasitic fungus botrytis bassiana. A good variety of the fungus bred in 1972 by the Fukien Forestry Scientific Research Institute using laser technique can kill 80 to 90 percent of the pine caterpillars in the forest. The institute succeeded in producing the botrytis bassiana in plants in 1966. Some provinces and autonomous regions also use large quantities of bacillus thuringiensis and an egg parasite called trichogramma to reduce and control the pine caterpillar. Results here were also very satisfactory.

## SUDAN

### 'AL-AYYAM' CONDUCTS STUDY OF LOCUST PLAGUES

Khartoum AL-AYYAM in Arabic 23 Mar 78 p 5

[Text] SUNA--One swarm of locusts can devour 9 million grams of crops in a moment.

The locust has a long story with man which began at the same time that the struggle for survival began on this earth.

In the minds of many of us the locust is associated with the freedom and mirth of childhood. It is also associated with green autumn days in which children run gleefully after delicate slender locusts spreading their diaphanous wings, hurling themselves into the air, then falling into the grass.

This romantic picture... Is it meaningful for a big game and for an unending battle which broke out between locust and man, and which is still continuing, in which man employs aircraft, vehicles, technology and every kind of poison that man can develop?

The locust weighs 3 grams. It does not live more than 6 months, during which time it produces more than 300 [baby] locusts. They cause the same fear caused by the plague, cholera and all the epidemics man has known throughout his history, so that we in the Sudan record history by the locust raids against us. We have heard of the "year of the locusts" or the "year of the locust," a sad and painful remembrance, because it meant famine. One swarm of locusts is enough to destroy unlimited areas of crops. As [the swarm] goes along it sweeps over [the crops]. When morning comes only stems remain. Not even grass is left for the flocks. That is not unusual. The swarm consists of 20 to 30 million locusts, each of which eats its own weight. The sweeping onslaught continues to wipe out entire regions. The locusts' advance may begin in the middle of the Sudan, and continue until it reaches the coast of West Africa on the Atlantic Ocean.

Although locusts stand in the same rank as the most serious plagues, there are broad coordinated international efforts to combat them, which, nevertheless have been unable to wipe them out. They are hidden, then they appear, looking for carelessness, to attack. If locusts have this frightful meaning, does it mean something with respect to the Sudan? Do they pose a danger to our country? One does not have to search or investigate very far to answer this question. The situation is that the Sudan is a region susceptible to locust raids almost throughout the year. It is surrounded by all the regions in which they reproduce and multiply, and then prepare for their war of devastation.

#### The Two Locust Migrations: Winter and Summer

Dr 'Abd-al-Mun'im Hasan Karar, a distinguished expert on locusts, says: "Locusts are found throughout the year. There are well known determined regions where they are found. They have two breeding grounds, one in the summer and one in the winter. Their reproduction and proliferation depend on heavy rains. Let us take a look at these two regions, which are:

"1. The summer breeding grounds: This region stretches to link regions in the continents of Asia and Africa. In Africa it consists of the African belt which stretches across central Africa. This is a region in which there is heavy rain during the summer. This region stretches from the African continent to Asia, and includes the region of the southern part of the Arabian Peninsula, India, Pakistan and all the regions situated on the same line. It is the region in which rain falls in the summer.

"2. The winter and spring breeding grounds: The locusts are confined in it to the western coastal region of the Red Sea. It begins in southeast Egypt and extends along the coast, and includes the Sudan, Eritrea, and the northern part of Somalia. In this entire region rain falls in the winter. Opposite this same region on the east shore of the Red Sea is

another region where locusts breed: the Tihamah, which stretches to include the Yemen Arab Republic and the Popular Democratic Republic of Yemen.

"In this region the rain falls in the winter as is well known, and covers it with vegetation which is necessary for the reproduction and proliferation of the locusts."

#### The Locust Begets 400 Locusts in 4 Months

As we have seen, locusts require earth with vegetation and moisture in order to reproduce and proliferate. The locusts lay their eggs in a hole in the ground, either in sandy soil or partially sandy soil, such as in al-Qurayrah. After the locust has laid them, the eggs remain in the hole for 2 weeks. Then they hatch and the larvae begin to creep along among the grains of sandy soil which covers them to emerge at the surface of the ground to feed on the green vegetation. The locust passes through a number of developmental stages until its development is complete. This goes on in an uninterrupted circle. After the larval stage the locust grows, and its body size increases until the skin can no longer contain it, so it molts. It then grows to reach another stage. There is 1 week between each stage. This continues for five developmental stages. Full growth is completed after 35 days. Then the locust begins to lay eggs. Each time it lays between 80 and 100 eggs. It continues to do that more than three times. After 5 or 6 months the life of the locust comes to an end, and it dies after leaving between 300 and 400 of its progeny.

If we take a simple statistical survey it would show us the enormous number [of new locusts] produced by the locusts as a result of this gigantic multiplication. The swarm, as we have said, consists of 20 to 30 million locusts, each of which begets 300. The production is 6 to 9 billion locusts. If we know that the weight of a fully grown locust is 3 grams, and that it eats its weight in vegetation, we see clearly the extent of the destruction and ruin caused by one swarm when it sweeps over a region of vegetation anywhere in the world.

#### The Night Traveler and the Desert (Kabura)

The locusts found in our region are of three varieties, divided as follows:

1. The night traveler: They are found in the Sudan throughout the year, and they live continuously this way in the regions of western Sudan, particularly in the regions of al-Hashab where trees which produce gum arabic are farmed. They are also present in the White Nile region and sometimes they come from Chad. This represents a danger to the Sudan. Therefore combat aircraft and groups stand ready should they appear to be invading the country.

2. The (kabura): Their principal breeding grounds are the waters and swamps of the Niger River in the Republic of Mali. This variety of locust lives on corn and sugar cane, and prefers moist muddy soil in which there is always water.

The appearance of this variety of locust began after the first planting of sugar cane, when they found a suitable environment in it. Squads have been prepared to combat them. As Dr 'Abd-al-Mun'im Hasan Karar says, we have so far been able to confine and control this variety of locust, and it does not now represent a danger. But if we are careless about it and do not work to wipe it out, it can get out of control and become a menace.

3. The desert locust: This is a large variety of well known locust. It is the variety which international publications talk about, and which migrates from one region to another, creating a serious danger for many parts of the world. It is found in the regions which we have mentioned previously, and which include the Middle East, the Arabian Peninsula, and Southwest Asia.

Locusts Fly Uninterruptedly for 20 Hours, at a Speed of 9 Km [Per Hour]

Locusts know no geographic or political boundaries. They travel from one country to another without asking permission. They descend like a curse, destroying every green thing. But they avoid whatever is dry.

The locusts' migration begins in search of green nourishment. As we mentioned, they reproduce in the winter along the coast of the Tihamah in the Kingdom of Saudi Arabia up to the PDRY or along the coast stretching from southeast Egypt to northern Somalia. They reproduce and proliferate in the region. When a dry spell comes, the region of summer rains is in the middle of the African continent, the southern portion of the Arabian Peninsula and south Asia where the rains began to fall and where it has begun to become green. The locust raid begins in this region in the form of swarms. The migration of the locusts is not a consciously planned and arranged journey. Rather, the seasonal winds intervene to a large extent. The locusts start out from the coast of the Tihamah in the Kingdom of Saudi Arabia, for example, following the movement of the winds. They cross the Red Sea, the deserts, and the wastelands, until, if they are not stopped or killed, they reach the coast of the Atlantic Ocean. A locust can fly continuously for a period of 20 hours, and at a speed fluctuating between 8 and 9 km per hour. The fluctuation in the speed is a result of the movement of the winds. When the flying is at a high altitude the speed is greater. Altitude plays the most important part in it, as does the subject of feeding. When the locusts pass a region of vegetation, they fly at a low altitude to devour the plants, tree covering or crops to provision themselves until they complete their journey. When they pass a barren region, they fly high to speed away from it. Locusts do not sleep, but they spend a period of quiescence, particularly at night, when they obtain the necessary rest to continue the trip.

## The Truth About the "Mountain of Locusts"

Many stories and interpretations have been spread, especially in olden times and in the popular imagination, about this locust migration. Travelers crossing the desert have frequently recounted that they saw a high mountain, which, when they were close to it, they found to be a swarm of locusts. Others have said that they saw a cloud which they thought was something out of the ordinary. When it came close to them they found that it was nothing but a swarm of locusts. As for locusts covering the sun, this is something we hear about almost constantly, particularly in agricultural regions.

Dr 'Abd-al-Mun'im Hasan Karar says: "The first two notions may be the result of what is called an optical illusion, which can be attributed to two factors pertaining to the locust migration.

"1. During their flight the locusts, as we have learned, are controlled by the wind flow. The swarm of locusts, which consists of millions, may happen to pass through a low pressure area resulting from a high temperature. The air which is in contact with the ground becomes hot and expands, and rises again higher. Hitting the middle of the swarm, it raises it higher. Then when they pass beyond this area, they descend again. When, as we have said, the swarm consists of millions, the first of them precedes the last over a long area and [the swarm] occupies a long area. That which is exposed to the warm currents and which rises with them gives the appearance of a tapered peak similar to the peak of a mountain. A person who sees it from a distance may imagine that it is a moving mountain.

"2. Whenever the swarm of locusts finds land with some vegetation, the first of them descends on the first of it, and the ranks follow upon it in succession. When the ranks are finished, the ones which descended begin to ascend. With the uninterrupted repetition of this movement, from a distance the locusts appear to be a solid, swiftly moving cloud."

### Weapons From the Branches of Trees and Aircraft

As man has invented the means to combat plagues, man has taken a stand to battle locusts by every means which he has been given. In the beginning there were the simple primitive methods. But they were, in any case, an attempt. Then they advanced as a result of human progress, intellectual development and expanding mental powers. In the beginning, the battle in the Sudan, for example, appeared as follows:

1. When the swarms of locusts attacked their farms, the farmers would fight them with tree branches, beating the locusts with the branches whenever they tried to descend on their farms, dispersing them and destroying their cohesiveness. But this requires physical effort, and it might not be effective. Indeed, the benefit of it is relative.

2. They would fight the swarms by making repeated loud noises by banging on metal sheets in order to instill fear in the locusts and drive them away.

3. As for the larvae, when they crawl they make a noise. When the farmers hear it they dig trenches in front of them and they fall into them while crawling along. Soil is then piled on them or they are burned.

4. There is another way--gathering dry grass and setting it afire or burning it in the trees which the locusts are in.

During the thirties the Sudanese Government began an organized campaign to combat the locusts. This section developed until it became an organized division having powers. It is within the Office of Combating Plant Diseases.

Organized scientific combat began. It is divided into two parts:

1. Land combat. This uses vehicles equipped with an apparatus called an exhaust sprayer, an apparatus which takes advantage of the force of the [vehicle] exhaust. A hose is attached to it, inserted from above with a tank in which there is a nozzle which sprays the poison at the locusts.

There is spraying equipment which is carried on the back, or poisoned food is scattered by hand.

But doesn't this cause complications for man? Dr 'Abd-al-Mun'im Hasan Karar says: "The food which is scattered by hand consists of crumbled peanut shells, every 95 kilograms of which is mixed with approximately 5 kilos of (gemexin) which does not cause any complication for man."

True. There are other insecticides such as Melathione and dieldrin, which pose a danger to man. Consequently they are not used except in outlying places.

2. Aerial combat. This uses aircraft fitted with a special apparatus called the (micratin). Aircraft usually join in the fight after the locust danger has gotten out of control and ground combat cannot handle it.

Yearly preparations are made for the campaign by preparing the food a sufficient time before the rainy season. Each province receives its requirements of food and transfers it to the strategic places. If the locust danger should increase in one of them and it is unable to combat them, its neighbors assist, and the office intervenes to help in exterminating the locusts.

There are permanent points for monitoring the locusts. Each assisting governor writes a detailed monthly report about the locusts, and sends it to Khartoum which in turn sends it to the local and international organizations, and to every combat center of people called "scouts" whose task is to report on any locusts in their region.

In the winter the campaign is concentrated in the Red Sea coastal region, where, as Dr 'Abd-al-Mun'im Hasan Karar says, control is possible. Danger comes whenever locusts raid the vast interior of the country.

#### International Cooperation

Locusts are not the problem of [merely] one country. Rather they are one of the problems of mankind. Consequently the efforts to combat them are closely connected. Thus the matter of combating locusts has been studied throughout the world by the FAO. Then their breeding grounds were divided into sections which consist of the following:

1. The Southwest Asia region which includes India, Pakistan, Afghanistan, and so on.
2. The Near East locust combat region which includes all the Arab states situated in the Middle East, such as the Sudan, Jordan, Kuwait, Lebanon, the Gulf states, the Kingdom of Saudi Arabia, the YAR and the PDRY.
3. The northwest Africa region, which includes Libya, Tunisia, Morocco and Algeria.
4. The West Africa region, which includes the nations of the west Africa region.
5. The East Africa region, which includes the Sudan, Somalia, Ethiopia, Kenya, Tanzania, Uganda and Jibouti. All of the nations of the preceding regions pay a fixed contribution, and data is exchanged among them. They also offer assistance to each other.

#### Is a Locust Attack Possible?

The question comes as a conclusion to monitoring the locust migration. Is a locust attack against the Sudan possible? When was the last attack against our country?

Dr 'Abd-al-Mun'im Hasan Karar answers: "Combat groups are now opposing locusts in the coastal regions, and they are keeping an eye on the situation. It was possible to gain control over the situation after one of the combat aircraft intervened. It has returned now after the situation has become calm. But as I have noted, the Sudan participates in two regions: the Arab region, which now has sufficient data concerning it, and there is no fear with respect to it.

"The second region is the East Africa region. Here lurks the danger now. We do not have any data on the locust situation along the Eritrean coast, although data has arrived that large quantities of them have reproduced. As I have said, data is important in combating locusts, especially that which reports the regions of their proliferation and their movements. This is lacking now, and is causing us increasing anxiety. In any case we have taken precautionary measures to confront this situation.

"It is well known that locusts do not attack annually, but rather every 2 or 3 years. There is nothing so harmful as carelessness with respect to them or laxity in monitoring them, because they are always present in the form of islands which can be expected to escape to be the cause of horrible famines.

"As for the worst onslaught they made against our country in the last few years, it was in 1968."

#### TANZANIA

##### SPREAD OF LOCUSTS

Lusaka TIMES OF ZAMBIA in English 30 Apr 78 p 1

[Text] Dar es Salaam, Saturday--A swarm of red locusts has spread over a six square kilometre area in southern Tanzania's Sumbawanga district, Rukwa region, it was reported here today.

The insects invaded two villages and then settled in a game reserve near the food-growing area along the Mtowisa river.

Meanwhile Tanzanian Prime Minister Edward Sokoine yesterday opened the 34th ministerial council session of the Desert Locust Control Organisation for Eastern Africa in Arusha.

Mr Sokoine called for regional and international cooperation in fighting the menace of pests and vermin all of which "robs the peasant of the fruits of his hard labour."--ZANA.

#### VIETNAM

##### RICE CROP ATTACKED BY INSECTS, DISEASES

Hanoi Domestic Service in Vietnamese 2300 GMT 24 Apr 78 BK

[Text] Binh Tri Thien Province has 3,500 hectares of 5th-month spring rice affected by brown leafhoppers and other kinds of harmful insects.



The Provincial Agricultural Service has instructed all districts, villages and cooperatives to adopt measures to eliminate insects to save this rice crop and sent insecticide and cadre teams to the localities affected by the insects to help in control.

Hanoi Domestic Service in Vietnamese 1100 GMT 25 Apr 78 BK

[Text] The Plant Protection Department subordinate to the Ministry of Agriculture recently announced that rice blast has affected large cultivated areas in Nghe Tinh, Thanh Hoa, Thai Binh and Ha Nam Ninh provinces. The disease has also affected rice crops in many other provinces but on a smaller scale. The department then introduced measures to control this blight.

Hanoi Domestic Service in Vietnamese 1430 GMT 4 May 78 OW

[Excerpts] During the planting of this year's 5th-month spring rice crop, northern areas have made great efforts to expand areas under intensive cultivation. However, due to prolonged bad weather, transplanted rice plants in the rice paddies have grown slowly and have become infected with rice blast, *helminthosporium oryzae* [beenhj tieem lwar] and spotted head worms [saau daauf nams].

Potash fertilizer must be applied to rice paddies where rice blast or silverleaf disease are likely to develop.

We must continue to control the above diseases while protecting the rice from other possible diseases and harmful insects such as rice blast, stem borers, and immature roots which may affect the late rice.

CSO: 5400

- END -